

Energising Development Progress Report 2024

2024

Partnership between

The German Federal Ministry for Economic Cooperation and Development (BMZ)

The Netherlands Ministry of Foreign Affairs, Directorate-General for International Cooperation (DGIS)

The Norwegian Agency for Development Cooperation (Norad)

The Swiss Agency for Development and Cooperation (SDC)

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EnDev at a Glance

Despite progress in expanding energy access, 685 million people worldwide still live without electricity and about 2.1 billion people lack access to clean cooking solutions. Moreover, between 2020 and 2022, population growth outpaced access expansion, resulting in 10 million more people without electricity in 2022 than in 2021. Not having access to clean, reliable and affordable energy has a dramatic impact on quality of life, environment, health, education, and income opportunities. EnDev's involvement focuses on providing access to needs-based, climate-friendly energy. This is a pivotal factor in strengthening socio-economic development and combatting climate change.

EnDev's drive is to improve the lives of the most vulnerable people, ensuring that no one is left behind. Economic opportunities and green jobs are created by building markets for modern, renewable energy. EnDev contributes to reduced greenhouse gas emissions to protect our planet's climate. Its approach is to empower structural, self-sustaining change, kickstarting market and sector development that evolves sustainably even after EnDev phases out.

EnDev's work is about people. Results are monitored and reported rigorously. EnDev's achievements in supporting households, social institutions as well as micro-, small-, and medium-enterprises to gain access to electricity or modern cooking solutions can be found in this report. This report also presents EnDev's impacts on gender, job creation, and reduced carbon dioxide emissions.

EnDev is a strategic partnership. Dedicated donors, partners and individuals work together to support social development and economic growth by providing access to modern, renewable energy in more than 20 countries around the globe. The driving force behind EnDev is the partnership of Germany, the Netherlands, Norway, and Switzerland: donors which are committed to accelerating energy access.



EnDev's Key Achievements

By December 2024

33.9 million

People with access to modern energy

7.8 million

People with access to electricity

26.1 million

People with access to modern cooking solutions

113,420

Micro-, small-, and medium-sized enterprises with access to modern energy for productive use

3.02 million

Tonnes of CO₂e emissions mitigated in 2024

35,480

Social institutions with access to modern energy

1 Executive Summary

Driving global energy access: Advancing social, economic, and climate impact through innovation and partnerships in 2024.



Key progress in 2024

Throughout 2024, the multi-donor partnership *Energising Development* (EnDev) continued to play a central role in advancing sustainable and inclusive energy access, achieving meaningful impact across social, economic, and climate dimensions in over 20 countries. To date, EnDev has provided modern energy to 33.9 million people, improving their quality of life. The programme has supported 35,480 social institutions—enhancing services in schools, health centres, and communities. In economic development, EnDev empowered over 113,420 micro-, small-, and medium-sized enterprises (MSMEs), by providing energy for productive use. This contributed to job creation, with 32,780 people employed in clean energy sectors. On climate action, EnDev's clean cooking and renewable energy solutions mitigated 3.02 million tonnes of greenhouse gas emissions in 2024. Through these efforts, EnDev fostered a more sustainable and equitable future with a focus on long-term impact and innovation.

Portfolio development

In 2024, EnDev advanced its *Multi-Annual Indicative Programming*, emphasising inclusive energy access and higher-tier cooking (HTC) solutions. In total, nearly one million marginalised people (976,900) from *Leave No One Behind* (LNOB) groups gained access to modern energy, while the number of HTC users increased significantly to a total of one million people. Enhanced partnerships, innovative *Demand-Side Subsidy* pilots, and improved monitoring reinforced EnDev's efforts. As part of a strategic consolidation, EnDev concluded its engagement in Latin America in 2024.

With the programme's extension until 2026, these efforts, alongside strategic knowledge

exchange, pave the way for sustained progress in the coming years.

Financial outlook

In 2024, EnDev secured an additional EUR 25 million in funding, consolidating its financial base. This included core contributions from the *German Federal Ministry for Economic Cooperation and Development* (BMZ), the *Netherlands Directorate-General for International Cooperation* (DGIS), and the *Swiss Agency for Development and Cooperation* (SDC). As a result, EnDev's total accumulated available funds now stand at EUR 604.40 million.

Partnerships and innovation

EnDev deepened collaborations with governments, the private sector, and international initiatives in 2024. Key efforts included scaling electric cooking (eCooking) through the *Global electric Cooking Coalition* (GeCCo), expanding carbon market engagement, and implementing the *Demand-Side Subsidies Component*. These efforts strengthened market ecosystems, increased affordability, and drove the uptake of scalable energy solutions.

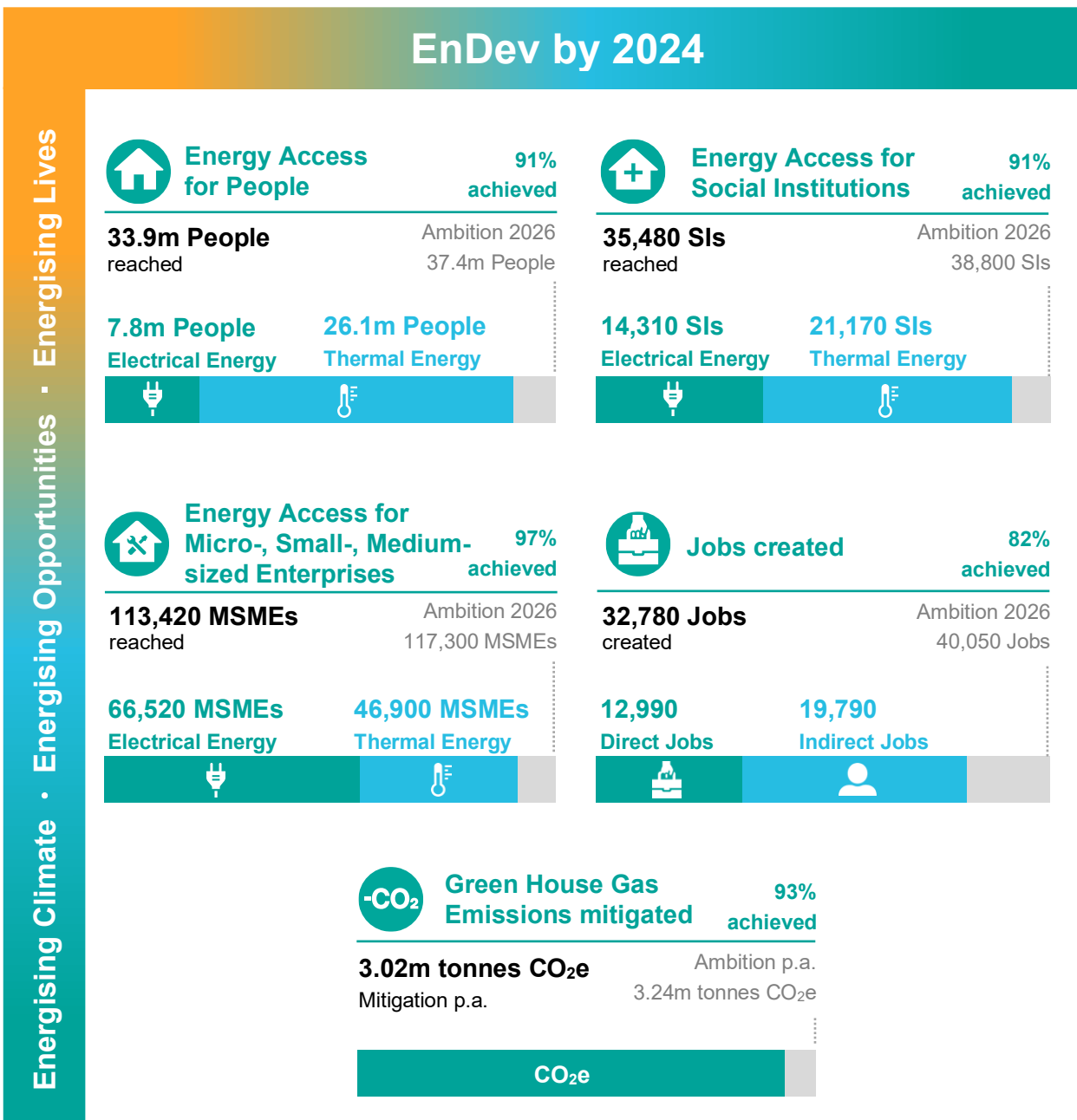
EnDev also launched the next cycle of its Innovation Window with six new pilot projects. EnDev's Learning and Innovation Agenda delivered comprehensive insights on the role of digitalisation and innovative finance in energy access, emphasising sharing of experience and knowledge, addressing affordability challenges, and enhancing sustainable energy solutions.

EnDev's achievements in implementation progress, portfolio development, strategic partnerships, and financial consolidation underscore its crucial role in advancing global energy access. By fostering innovation and inclusive growth, EnDev remains a driving force for positive change.

2 Progress of Outcomes and Impacts

EnDev advances toward 2026: For a more sustainable and equitable future, EnDev expanded modern energy access for 33.9 million people, supporting MSMEs, creating jobs, and mitigating greenhouse gas emissions.


Figure 2-1 Annual progress dashboard



2.1 Energising Lives: Social development

EnDev fosters inclusive, sustainable energy markets in over 20 countries, ensuring that even remote communities gain access to modern energy. EnDev’s work in the field of social development aims to reduce poverty and enhance health outcomes by delivering modern energy services to both households and social institutions.

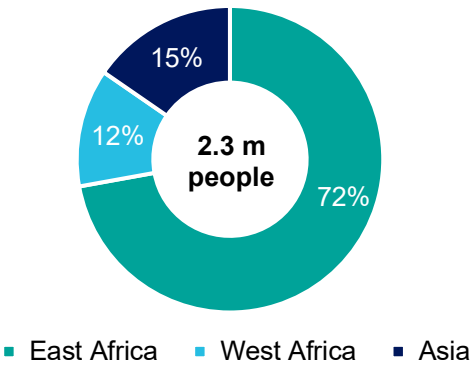
Access to energy

 In 2024, EnDev continued its steady annual progress by providing access to modern energy to an additional 2.3 million people (1.2 million of whom are women and girls). Cumulatively, EnDev has reached 33.9 million people (17 million women and girls) with access to modern energy products and services since 2005. This equates to 91% of EnDev’s ambition of reaching 37.4 million people by the end of 2026¹.

EnDev results in 2024 were predominantly reached in sub-Saharan Africa. Beneficiaries in this region accounted for 84% of the people reached in 2024 (see Figure 2-2), with the highest gains in Ethiopia, Senegal, and Tanzania. No new results were

accounted for in Latin America, as the last Latin American country in EnDev’s portfolio—Bolivia—was phased out in 2024.

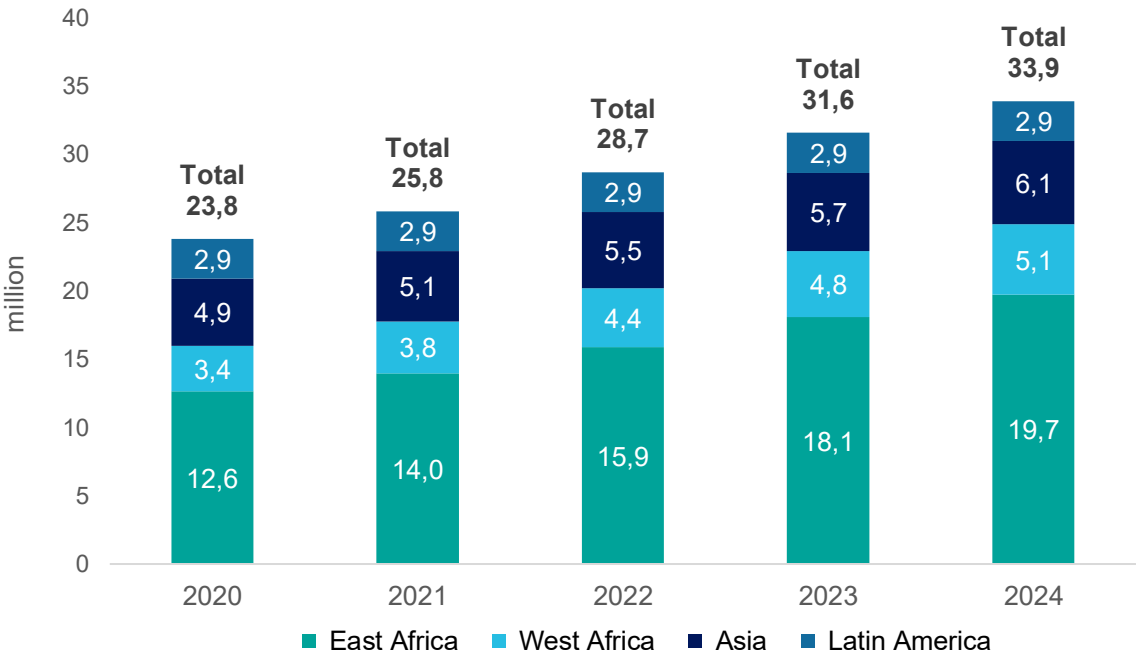
Figure 2-2 People reached by region in 2024²



Since 2005, 73% of the beneficiaries reached were located in sub-Saharan Africa, with East Africa accounting for 19.7 million people alone, followed by steady gains in West Africa (mainly Senegal) and Asia (mainly Laos) (see Figure 2-3).

In terms of energy type, 84% of the people reached in 2024 gained access to thermal energy, while the remaining 16% gained access to electricity. Since 2005, EnDev's

Figure 2-3 People reached overall



¹ Note that the ambition level was updated to reflect the programme duration until 2026.
² Due to rounding of values (applied as a general rule in this report), results / totals may not sum to 100%.

impact on household energy access has been largely driven by thermal energy, such as clean cooking solutions, with electricity accounting to 23% of total household access.

Examining the relationship between achievements made and expenditures of the programme, it is observed that annual expenditures per person decreased consistently from EUR 47.8 in 2020 to EUR 12.2 in 2023. However, the expenditures per

person increased in 2024 to EUR 18.9. Despite this increase, costs remain less than half of those in 2020. As noted in the *Value for Money* box on page 9, the rise in expenditures per person in 2024 reflects EnDev's focus on HTC solutions and reaching vulnerable groups. The consistent analysis of the relationship between outcomes and associated expenditures underscores EnDev's commitment to transparency and strategic alignment in delivering sustainable energy access.

Quality of access levels of electricity and clean cooking

EnDev makes use of the [Multi-Tier Framework for Energy Access](#)—developed by the *World Bank Group* and others—to differentiate the quality of energy access for both thermal and electric energy. Tier 1 corresponds to “basic energy access” whereas Tier 5 corresponds to “full access to modern energy”.



Tier 1 solutions account for the majority of EnDev's results, being the most affordable solution to cover households' basic needs. Sales of individual solar systems, which contribute to Tiers 1 to 3, stabilised over the past three years. Based on analysis of EnDev

interventions in 2024, the pilot-scale mini-grids at Tiers 3 and 4 remain economically unviable without major subsidies, yielding low numbers until government support enables scaling. From a cost-benefit perspective, considering affordability and ability to pay, off-grid solar remains the most cost-effective solution for electricity access. However, activities supporting grid connections are gaining interest, driven by stronger partnerships with power utilities and growing ambitions for eCooking. Nonetheless, the growth of the number of people EnDev reached in Tier 5, slowed down in 2024 mainly due to the phasing out of Bolivia.

Table 2-1 Number of people reached with electricity access by Tier level

Access level	Number of people reached in total	Number of people reached in 2024	Growth in 2024	Example appliances, systems, and technologies
Tier 5	903,470	9,100	1.0%	Grid, mini-grid, customised photovoltaic (PV)-systems (≥ 2kW capacity)
Tier 4	872,210	40	0.0%	Limited grid, mini-grid, customised PV-systems (≥ 800W capacity)
Tier 3	260,570	2,400	0.9%	Mini-grid, customised PV-systems (≥ 200W capacity)
Tier 2	1,808,380	10,950	0.6%	Customised / preconfigured PV-systems (≥ 50W capacity)
Tier 1	3,065,390	344,710	12.7%	Preconfigured PV-systems (≥ 3W capacity)



Similarly, EnDev classifies the quality of access to cooking energy by applying a reference framework which builds on the *Multi-Tier Framework for Energy Access*. In 2024, by far the most substantial increase in access figures was achieved in Tier 5, which primarily represents households gaining access to the cleanest cooking energy solution: eCooking. Some growth can also be seen in Tiers 3 and 4, reflecting EnDev's

strategic efforts as guided by the Consultative Group to provide solutions of higher quality and alternative fuels—higher-tier cooking.

In absolute terms, the people reached with Tier 1 and 2 access account for the largest share of all people reached, as these tiers provide the most affordable and accessible cooking solutions for benefiting households.

Table 2-2 Number of people reached with clean cooking by tier level

Access level	Number of people reached in total	Number of people reached in 2024	Growth in 2024	Reference service level ³
Tier 5	343,070	197,870	136%	Cooking with electricity and/or biogas and respective stoves
Tier 4	499,280	44,850	10%	Cooking with ethanol cookers, pellet gasifier and/or advanced biomass stoves
Tier 3	165,710	2,990	2%	Range of high performing solid biomass stoves
Tier 2	10,672,600	948,530	10%	Range of medium performing solid biomass stoves
Tier 1 ⁴	10,220,610	753,220	8%	Basic improved solid biomass stoves (with traditional cooking technologies and fuels)

Progress of energy access in associated projects

Besides the outcomes of the EnDev programme, projects that are associated to EnDev contribute results to the partnership's overall success.⁵ EnDev, together with its associated projects, have provided modern energy access to a cumulative total of 46.8 million people, see Figure 2-4.

The associated project **Promotion of climate-friendly cooking: Kenya and Senegal**, funded by BMZ and the *Green Climate Fund* (GCF) and implemented by

Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), achieved significant results with its market transformation approach for improved cookstoves. The project target of 11.2 million people with access to climate-friendly cooking technologies was overachieved, with a total of 12.6 million people (51% women) reached by 2024. The project thus plays a key role in transforming the historically artisan-based production into a cost-effective and sustainable semi-industrial sector. The project also

³ In practice, people often use a combination of cooking solutions in parallel to meet their cooking energy needs—this phenomenon is referred to as “stove stacking” in the international debate. The technology and fuel information provided in the table is illustrative of the respective service level.

⁴ All cooking solutions promoted under EnDev must pass the eligibility criteria of either min. 20% thermal efficiency or min. 30% fuel saving compared to the baseline cooking solution.

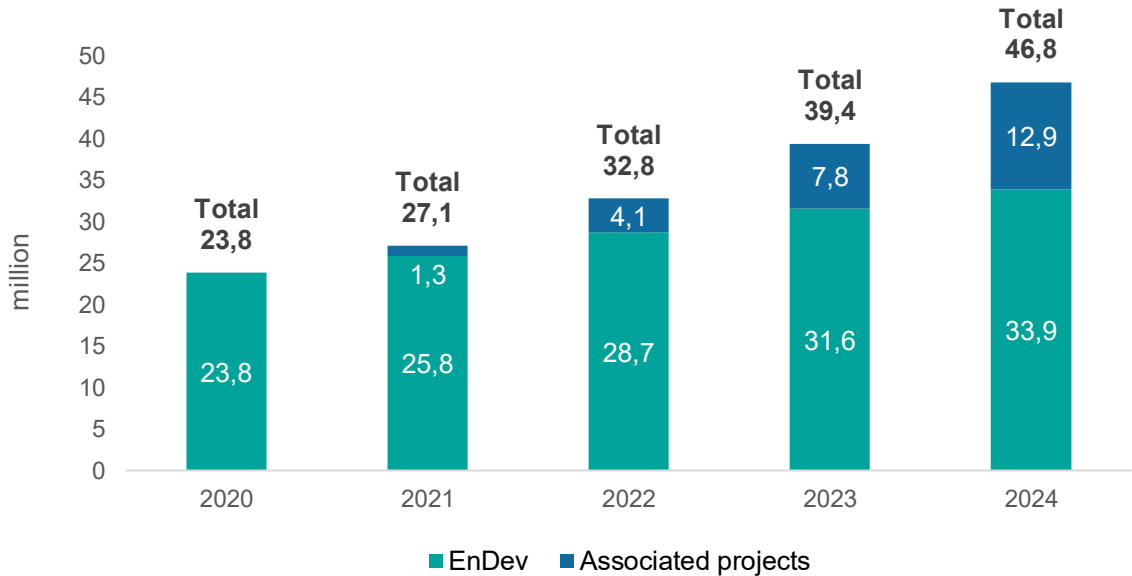
⁵ Associated projects adhere to the EnDev Strategy 2019–2025 stipulating the objectives, key features, and approach of the EnDev programme.

launched two knowledge products in 2024: [Guide on the Professionalisation Approach](#) describing how mass-production and -sales by local professionalised businesses leads to market growth; and [Climate-friendly cooking: Demonstrating CO₂ emission reductions](#), describing how biomass cookstove projects can account for contributions to the *Nationally Determined Contributions* (NDCs).

The associated project **Strengthening the Entrepreneurial Ecosystem for Clean Cooking (SEE-CC)**, funded by DGIS, the *European Union* (EU), and DANIDA, implemented by the *Netherlands Enterprise Agency* (RVO), made significant progress in 2024. By the end of 2024, over 5,000 biodigesters were built and 27,240 people reached with Tier 4 and 5 energy access in Burkina Faso, Kenya, Mali, Niger, and Uganda under the *African Biodigester Component* of SEE-CC. Likewise, the *Higher Tier Cooking Component* of SEE-CC reached a total of 222,180 people in Bangladesh, Cambodia, Ethiopia, and Uganda, primarily through the provision of eCooking solutions. By the end of 2024, SEE-CC enabled access to HTC for 249,080 people.

In November 2024, the Consultative Group granted EnDev’s **Regional Clean Cooking Action for West Africa (ReCCAWA)** the status of an associated project. The project is funded by the EU and DGIS, and implemented by RVO and the *Agencia Española de Cooperación Internacional para el Desarrollo—Spanish International Development Aid* (AECID). It aims to increase access to clean, efficient, sustainable, and affordable cooking energy solutions in West Africa by strengthening the enabling framework for clean cooking at regional and national level. The project proposes innovative financing and business models that scale up the supply, distribution, and adoption of clean cooking solutions. In 2024, ReCCAWA engaged with 12 West African countries⁶ through a regional workshop at the margins of the *Sustainable Energy Forum* of the *Economic Community of West African States* (ECOWAS) and launched an inventory study to identify the needs of the countries in the region. The study will analyse the potential scope for activities and build on EnDev, GCF, and SEE-CC activities.

Figure 2-4 EnDev partnership results—People reached incl. associated projects



⁶ Participants from Benin, Cabo Verde, Côte d'Ivoire, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone, The Gambia, and Togo.

Social Institutions



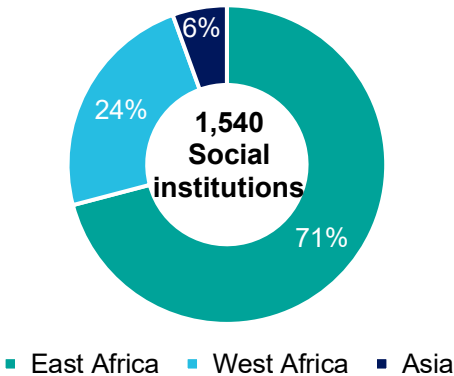
Beyond households, EnDev enhances energy access to social institutions, such as schools and health centres. By improving energy supply for these facilities, EnDev ensures that essential services like education and healthcare are improved.

In 2024, EnDev provided modern energy services to an additional 1,540 social institutions. Cumulatively, EnDev has provided a total of 35,480 such connections, led by Peru and Bolivia (44% together), followed by Ethiopia (12%). The total number of 35,480 social institutions with access to energy represents 91% of EnDev’s ambition of connecting 38,800 social institutions by 2026.⁷

In 2024, 94% of energy access to social institutions was provided in sub-Saharan Africa. Ethiopia and Kenya collectively represent almost 70% of new connections in 2024, with Uganda and Malawi accounting for the remaining 3% in East Africa. No results were accounted in Latin America due to its phasing out, see Figure 2-5. The primary technologies supporting social facilities in these countries included improved

cookstoves and solar water pumps for schools and churches, as well as PV systems for powering medical appliances and providing lighting in health centres and churches.

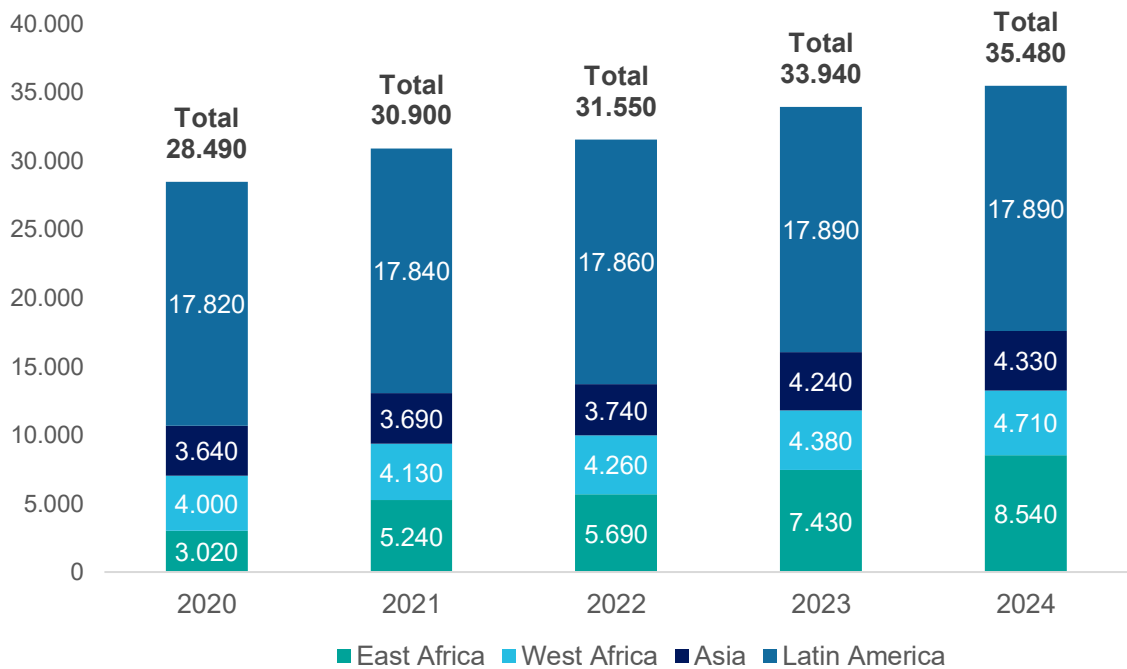
Figure 2-5 Social institutions reached by region in 2024



Overall, the data shows a shift in EnDev’s focus towards sub-Saharan Africa, with substantial past investments in Latin America, see Figure 2-6.

57% of newly reached social institutions in 2024 gained access to electrical energy,

Figure 2-6 Social institutions reached overall



⁷ Note that the ambition level was updated to reflect the programme duration until 2026.

consistent with the 2023 level and underscoring the central role of electrification in EnDev's activities. Since 2005, however, 40% of all social institutions reached have been connected to electrical energy, while the remaining 60% were reached with thermal energy.



Of the 35,480 social institutions that EnDev provided with access to modern energy since 2005, 67% are health centres (2,880) and educational institutions (20,770). Besides health centres and schools, EnDev enables access to energy for various other types of social institutions, such as community centres.

Since 2023, 510 health centres have benefited from EnDev's *Energising Health* project: a BMZ-funded component enhancing rural healthcare services in Ethiopia, Liberia, Malawi, Mali, and Senegal by addressing critical energy needs. Each site received a solar-powered vaccine refrigerator certified by the *World Health Organisation*, with a 10-year lifespan. The standardised, battery-less design significantly eases maintenance and the supply of spare parts, thus ensuring long-term sustainability.

All systems are monitored individually and integrated into an operating and maintenance framework agreement. The approach, which also includes digitalised remote verification of the installed systems, piloted under *Energising Health*, can be used for scaled projects across the entire off-grid electrification sector.

Reliable refrigeration improves distribution and reduces spoilage of vaccines. Thereby, it contributes to combating infectious diseases such as tuberculosis, hepatitis, yellow fever and COVID-19, as well as ensures reliable medical care for the community and the wider catchment area. Lighting, power for medical equipment, and strengthened communications infrastructure further provides sustainable support for health facilities. Local healthcare staff also benefit from the improved infrastructure and remain longer at remote duty stations due to the improved working and living conditions.



Senegal

In the rural village of Dayane Kadiolé, Senegal, Malick Mbaye, the head nurse at the local health post, once struggled with unreliable vaccine storage. Before each vaccination campaign, he had to travel up to 140 km to collect vaccines, storing them in a cooler with ice purchased from a neighbouring village. This often led to vaccine losses and delayed immunisations. When EnDev's *Energising Health* initiative introduced a solar-powered refrigerator to his clinic, Malick was finally able to ensure safe and consistent storage. The addition of solar lighting has further improved working conditions, enhancing safety for both staff and patients.

EnDev's initiative goes beyond electrification—it leverages digital tools to ensure efficient and scalable implementation. A cloud-based photo documentation system and real-time remote monitoring verify installations, maintaining quality while reducing costs. The success in healthcare highlights the broader potential of digital solutions in energy access, with applications extending to schools and communities. As EnDev continues to expand its efforts, digitalisation remains key to achieving scalable, sustainable impact and advancing global development goals.

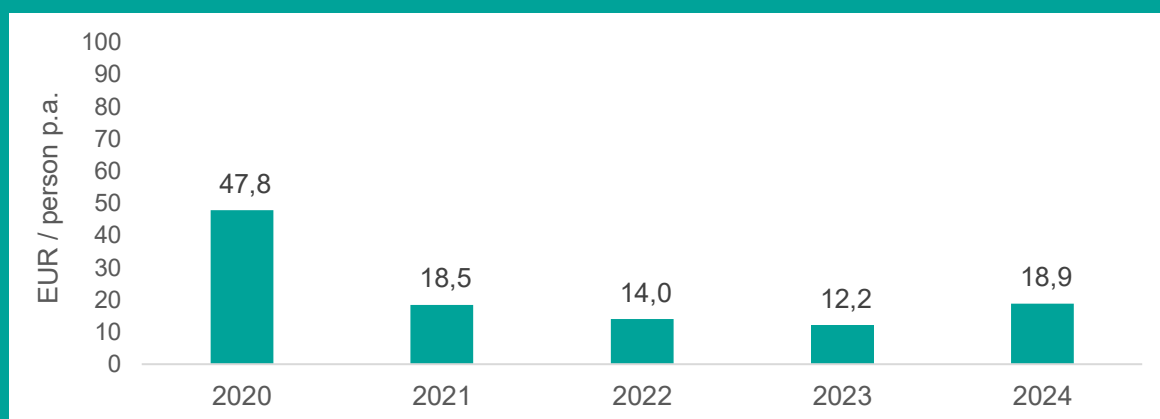
Value for money in EnDev

Analysing the programme's economic efficiency, annual expenditures per person reached steadily declined from EUR 47.8 in 2020 to EUR 12.2 in 2023. It rose to EUR 18.9 in 2024. This increase was anticipated when introducing EnDev's two strategic focus areas: HTC solutions and reaching vulnerable groups as part of the LNOB agenda. Both areas inherently require higher investments than other EnDev interventions. HTC is a relatively new topic in most countries, and early-stage market development demands greater capacity building and advisory services to establish viable markets. Similarly, LNOB interventions involve

working in fragile, remote areas with tailored approaches, while also addressing affordability gaps for beneficiaries.

While expenditures have increased in these specific areas, the long-term trend in EnDev's economic efficiency remains positive. The level of efficiency reporting remains unparalleled among international cooperation programmes. Although direct benchmarking is not possible, EnDev continues to set a high standard internationally by maintaining transparency and aligning expenditures with its strategic goals.

Figure 2-7 EnDev: Value for money



2.2 Energising Opportunities: Economic development

Beyond improving energy access for people and social institutions, EnDev drives rural economic growth by promoting climate-friendly energy use in businesses and job creation. By enhancing access of MSMEs to productive energy, EnDev boosts key rural sectors like agriculture, artisanry, and services, improving productivity, local manufacturing, and innovation.

Micro-, small-, and medium-sized enterprises

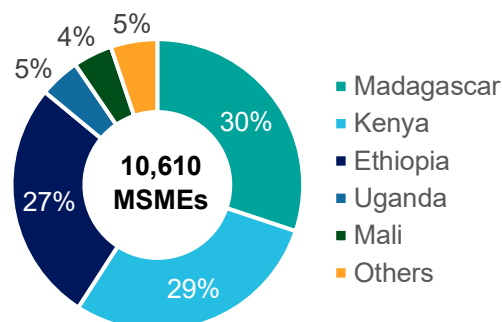


In 2024, EnDev provided energy access to 10,610 additional MSMEs, bringing the total number of MSMEs reached to 113,420. This represents a 97% achievement of EnDev's ambition to reach 117,300 MSMEs by 2026.⁸

The 2024 results reflect the evolving regional focus of the programme, with the closure of Bolivia's activities and the phase-out of Bangladesh's successful stove component. Consequently, 92% of MSMEs reached in 2024 were in Eastern Africa, followed by 5% in West Africa and 3% in Asia.

The total share of MSMEs reached in East and West Africa now stands at 41% (see Figure 2-8 and Figure 2-9).

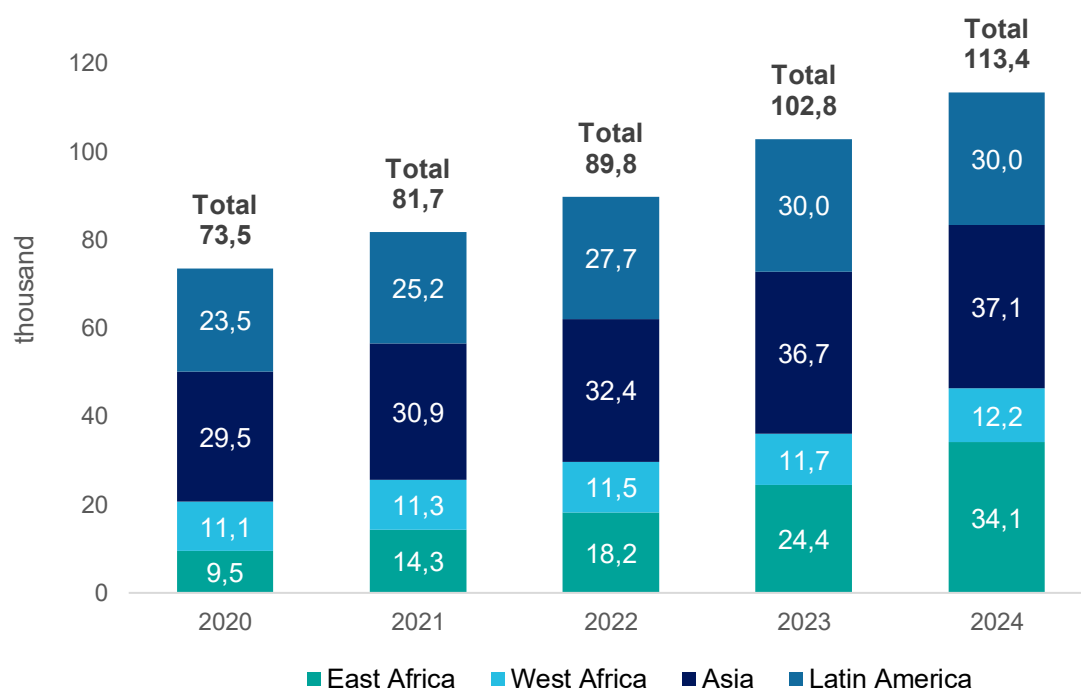
Figure 2-8 MSMEs reached by country in 2024



Most MSMEs supported in 2024 (60%) operated in services, particularly in food and accommodation. Nearly a quarter were engaged in agriculture, forestry, and fishing, while the remainder focused on trade, local manufacturing, and other miscellaneous activities.

In 2024, more businesses accessed thermal energy for clean cooking or heating (57%) than electricity (43%)—a shift from 2023's near-equal split. Historically, 59% of

Figure 2-9 MSMEs reached overall

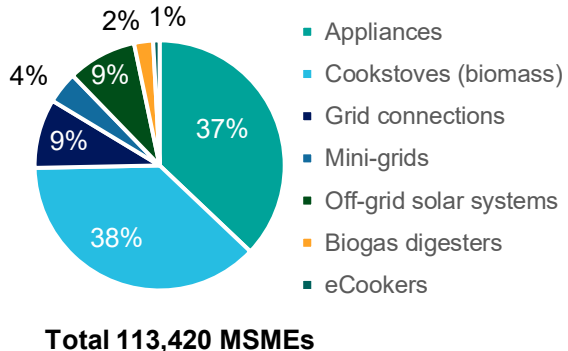


⁸ Note that the ambition level was updated to reflect the programme duration until 2026.

MSMEs gained electricity access, while 41% benefited from thermal energy. The decline in electricity access in 2024 stems from the phase-out of the Bolivian project and the wind-down of electrical components in other countries. Meanwhile, strong marketing of improved cookstoves—e.g. for small restaurants, especially in Madagascar and Ethiopia—drove the growth in thermal energy adoption.

In 2024, more than half of the supported businesses used their energy devices for cooking or baking, while nearly a quarter engaged in water pumping, primarily for irrigation. Lighting, cooling, and freezing make up the remainder. Since 2005, 75% of all businesses supported by EnDev purchased either an improved cookstove or an appliance, such as water pumps, while 25% benefited from access to electrical systems (off- / on-grid), biogas digesters, or eCookers (see Figure 2-10).

Figure 2-10 MSMEs reached by technology since 2005

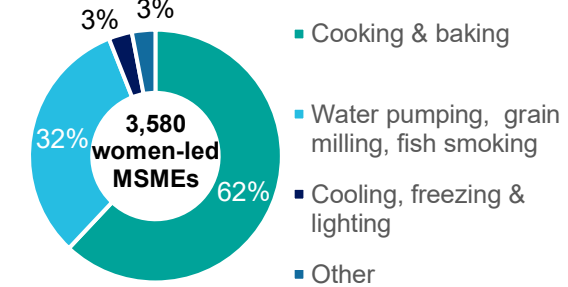


In terms of access to electrical energy, Kenya, Ethiopia, Uganda, and Nepal achieved the highest numbers of MSMEs reached. As in 2023, Kenya led with the highest results, supporting a broad range of end uses and technologies. In Ethiopia, new solar support activities have driven a surge of small entrepreneurs acquiring preconfigured solar home systems as well as customised solar systems for lighting and other purposes.

In terms of access to thermal energy, Madagascar recorded the highest number of businesses using improved cookstoves or other thermal devices. Ethiopia followed, primarily with businesses using improved stoves for making *injera* bread. Kenya, Mali, and Laos also demonstrated strong progress in advancing the use of clean cooking solutions.

Women-led businesses play a crucial role in EnDev’s activities for the productive use of energy. Overall, 34% of MSMEs supported in 2024 were led by women. Of these women-led businesses, almost all (94%) used their devices for food production or agricultural work (see Figure 2-11).

Figure 2-11 Types of activities of women-led MSMEs in 2024



To further strengthen MSMEs, EnDev also facilitates access to finance and business development support, providing tailored coaching and fostering an enabling environment for clean energy enterprises, see the information boxes on pages 12 and page 14.

The 2024 MSME results underscore EnDev’s role in driving rural economic growth and sustainable development. By supporting businesses with climate-friendly energy solutions, the programme enhances productivity, empowers female entrepreneurs, and fosters innovation. EnDev thus continues to catalyse long-term economic resilience and green growth.

Driving growth: Securing finance and empowering clean energy enterprises

Unlocking finance for small businesses

EnDev's *Small- and Medium-sized Enterprise (SME) Finance Facilitator* helps small businesses grow by mobilising working capital loans and unlocking financial resources that were previously out of reach. By doing so, it contributes to scaling up energy access markets. The *SME Finance Facilitator* approach stimulates impact and crowd financiers to provide small ticket size loans to early-stage companies in the energy access sector. This is made possible by subsidising transaction costs, which would otherwise render such loans unfeasible. Through a collaboration with specialist debt financier *Charm Impact*, this approach successfully facilitated three new loans and one follow-on loan in Liberia, Kenya, and Uganda.



Loan sizes ranged from EUR 55,000 to EUR 165,000, amounting to a total of EUR 480,000, supporting locally

owned and led enterprises (half of them by women) in the solar and clean cooking sectors. Throughout 2024, the financial landscape in EnDev countries deteriorated due to higher interest rates and a higher global investment risk profile, making it increasingly difficult to engage impact financiers. Nevertheless, the EnDev *SME Finance Facilitator* continues to expand its portfolio of partners, creating more growth opportunities for energy access companies.

Empowering clean energy SMEs through coaching and investment support

The *Energy Enterprise Coach* of EnDev provides tailored business support to SMEs in the clean energy sector across EnDev countries, empowering national enterprises to grow and thrive. In 2024, the facility entered its second year, supporting 116 companies in Kenya, Uganda, Ethiopia, Mali, Niger, Benin, Malawi, Bangladesh, and Cambodia with training, coaching, and mentoring. The *Energy Enterprise Coach* team also organised special get-togethers such as a networking event in Malawi that allowed SMEs to pitch their businesses, and matchmaking events in Uganda and Kenya that connected SMEs with financiers to drive investment and growth. To enhance the opportunities for SMEs to obtain access to finance, the *Energy Enterprise Coach* team collaborates with the SME Finance Facilitator

partners. Additionally, EnDev and the *Global Energy Transformation Programme (GET.Pro)* established a partnership to leverage synergies through cross-referrals, co-organise events and trainings, and enhance support for energy access companies, maximising their impact.



Certificate award ceremony for SMEs upon completion of the cohort training programme in Benin

Employment effects



Beyond expanding economic opportunities through the productive use of energy, EnDev is committed to strengthening job prospects within clean energy supply chains. Employment in the energy sector drives local economic growth and enhances livelihoods by creating stable income opportunities.

EnDev tracks job creation in the production and distribution of improved cookstoves, as well as in the deployment of renewable energy infrastructure and appliances, such as solar energy companies and mini-grid operators. For cookstoves, employment data is collected for locally manufactured stoves only, ensuring a focus on domestic market development. Jobs generated through the income-generating use of improved cookstoves—such as street food vendors or small eateries—are counted separately under productive use of energy (see MSME application of technologies in Table 2-3).

As a result of EnDev activities in 2024, a total of 32,780 people had employment compared to 32,610 in 2023.⁹ In relation to the ambition of reaching 40,050 jobs annually, this equates to a target achievement of 82%.

In 2024, 6,010 people were employed in the production and assembly, distribution, and sales of cooking energy technologies. This also includes the distribution of eCookers,

sales of which grew significantly (see also chapter 3.3 Advancing clean cooking solutions: Higher-tier cooking). In the electricity sector, 900 people gained employment as solar product distributors. Since 2014 (when this indicator was first introduced), 6,080 people had employment in the technical and administrative operation of EnDev-supported mini-grids. Among the MSMEs that gained access to energy, it is estimated that since 2014, 19,790 people were employed in part-time jobs as an indirect result of EnDev support (see Table 2-3).

EnDev continues to drive economic opportunities through its support for energy access, though the number of annual jobs created remained relatively stable in recent years. This is mainly due to the phase-out of activities in Bolivia, where previous efforts to promote the productive use of energy among MSMEs had contributed significantly to the number of created jobs. Meanwhile, the trend of a professionalisation of the production of improved cookstoves, described in last year's progress report, continues. As production processes become more efficient—shifting towards semi-industrial manufacturing—fewer workers are needed. At the same time, economies of scale in distribution networks are reducing labour demand. EnDev supports enterprises to streamline operations, optimise resource utilisation, and reduce manufacturing time. The reduction in labour hours aligns with the programme's goal of improving efficiency,

Table 2-3 Employment effects: EnDev-induced part-time jobs as of 2024

	Direct jobs			Indirect jobs
	Production and assembly	Distribution and sales	Operations and maintenance	MSME application of technologies
Cooking energy technologies	4,840	1,170		
Solar products		900		19,790
Mini-grids			6,080	
Total	32,780 jobs			

⁹ Temporary jobs that exist during mini-grid construction are not considered.

allowing for greater impact and sustainability in the long run.

EnDev's economic development efforts, particularly in bolstering MSMEs and employment effects, underscore its commitment to fostering sustainable growth in rural communities. The programme's focus on productive energy use has led to tangible

results, with significant achievements in job creation and empowerment, particularly for women entrepreneurs. As EnDev continues to innovate and streamline its operations, it remains dedicated to maximising efficiency and impact, laying a solid foundation for long-term economic resilience and development.

Enhancing the enabling environment

In 2024, EnDev developed the concept for its global instrument *Global Enabling Environment Facility*. The facility aims to strengthen the enabling environment for energy access markets in EnDev countries, by providing on-demand advisory services, such as developing concrete proposals on country specific questions, supporting policy frameworks or developing standards and labelling regulations. These services are delivered in response to requests from EnDev country teams and in close collaboration with public and private sector stakeholders.

In 2024, the first batch of requests have been made by EnDev country teams and are currently being worked on. Requests focus on quality labels, tariff roadmaps, policy support and capacity building for


government partners, with a particular interest in the area of eCooking. As a first activity in



2024, a study on resource mobilisation for the *Kenya National eCooking Strategy* and the *Kenya Cooking Transition Strategy* was completed, providing key insights to guide policy decisions, attract investments, and accelerate the adoption of clean cooking solutions in Kenya.

The advisory services in the *Global Enabling Environment Facility* are rendered by the consortium of *Global Off-Grid Lighting Association* (GOGLA), EED Advisory, as well as by local experts.

2.3 Energising Climate: Combating climate change

 EnDev's also works on combating climate change and its effects by mitigating greenhouse gas emissions. This is accomplished through promoting cleaner, more efficient cooking technologies and renewable energy-based electrification. These climate-related efforts align with EnDev's core mission of ensuring sustainable energy access.

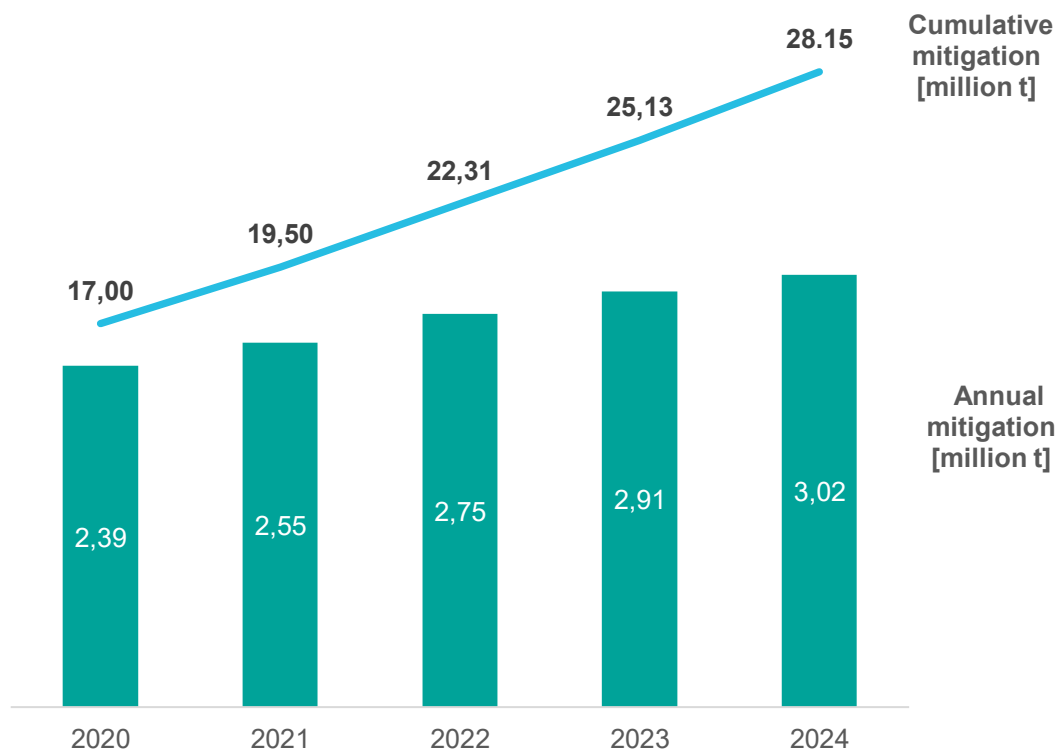
The annual emission mitigation achieved by EnDev shows a continuous positive trend. In 2024, 3.02 million tonnes of carbon dioxide equivalents (CO₂e) were mitigated, exceeding the 2.91 million tonnes mitigated in 2023. Compared to the annual ambition of 3.24 million tonnes of CO₂e mitigated, this represents a target achievement of 93%. The cumulative CO₂e mitigation of EnDev since 2005 amounts to 28.15 million tonnes of CO₂e (see Figure 2-12).

EnDev remains committed to transparent and reliable reporting of its climate impact. Its CO₂e calculations follow internationally recognised standards, primarily those set by the *United Nations Framework Convention on Climate Change* (UNFCCC). As these

methodologies are periodically revised, EnDev ensures regular updates to its calculations. In 2024, such an update was implemented to align with the latest UNFCCC methodology. The revised approach assumes lower baseline emissions in comparison scenarios, for example when assessing solar PV systems versus diesel generators. As a result, the reported annual greenhouse gas emissions mitigation from 2024 onwards will appear lower than in previous years. However, EnDev remains confident in the programme's overall positive impact, with a continued upward trend in emission reductions.

In 2024, 96% of the mitigated greenhouse gas emissions were attributed to the adoption of improved cooking solutions, while 4% resulted from renewable energy systems. This emphasises the considerable potential of clean cooking solutions to advance climate action, underscoring the need for continued investment in energy-efficient cooking solutions to maximise environmental benefits.

Figure 2-12 CO₂e mitigation



In 2024, the distribution of 1.02 million additional thermal and electrical energy systems through EnDev contributed to the mitigation of 3.02 million tonnes of CO₂e. An additional 400,000 systems were declared via carbon credit sales. These systems are not included in EnDev's emission mitigation calculation.

Carbon crediting mechanisms—often referred to as carbon markets—enable the monetisation of emission savings based on the issuance and sale of carbon credits. In 2024, EnDev has intensified its efforts to unlock carbon finance as a complementary source of funding for energy access. Most notably, EnDev has supported the development of several activity proposals under the carbon market framework of the Paris Agreement.¹⁰ The project proposals target different technologies (solar water pumps, eCooking) in different countries (Senegal, Rwanda), and have achieved varying degrees of progress. They seek funding from countries that have signed—or are negotiating—bilateral climate agreements with countries EnDev works in. At the same time, several carbon projects previously established by EnDev implementers are still in operation and continue to generate additional income through carbon credits. Tapping into such additional revenue streams helps local producers and distributors of energy technologies to bring down retail costs for end-consumers and/or generate finance for expanding their businesses.

EnDev's ongoing efforts to mitigate greenhouse gas emissions through cleaner cooking technologies and renewable energy solutions continue to yield significant climate benefits, with a strong focus on scaling up these interventions and exploring innovative financing mechanisms. As the programme progresses, EnDev remains dedicated to driving climate action and supporting sustainable energy access globally.

Woodfuel savings

EnDev's efforts to promote clean cooking solutions contribute to emission mitigation by replacing traditional cooking methods with more efficient alternatives. In addition, this also leads to a reduction in woodfuel consumption. In 2024 alone, the adoption of improved cookstoves resulted in estimated savings of 598,000 tonnes of woodfuel, alleviating pressure on natural resources and contributing to the prevention of land degradation. EnDev's estimations of woodfuel savings are based on the efficiency gains of the supported cooking

technologies. By reducing biomass demand, EnDev plays a pivotal role in fostering sustainable energy use and promoting environmental conservation.



¹⁰ Specifically, Article 6.2 of the Paris Agreement.

3 Progress in Portfolio Development

The development of EnDev's portfolio in 2024 reflects strategic transitions and robust scaling efforts—achieving significant results in inclusive energy access through LNOB and gender integration, expanding HTC solutions, forging strong partnerships, and bolstering monitoring, evaluation, and innovation to achieve sustainable energy outcomes.

3.1 Progress and transition: EnDev's continued impact and strategic phase-out

The implementation of the *Multi-Annual Indicative Programming* progressed successfully in 2024, maintaining a strong focus on inclusive energy access, prioritising HTC solutions, and the strategic commitment to LNOB.

In January 2025, EnDev's Consultative Group approved EnDev's programming until the end of 2026. The formal approval of BMZ was granted in March 2025. Thus, EnDev will continue operations in sub-Saharan Africa throughout the year 2026,

focusing on delivering outcomes at scale and ensuring sustainable results. Meanwhile, EnDev will conclude its activities in Asia by the end of 2025. In the four phase-out countries (Bangladesh, Cambodia, Laos, and Nepal), initial transition and closure processes are underway.

This process prioritises the consolidation of achievements and responsible handover to local stakeholders, while ensuring sustainability of impact.

3.2 EnDev's progress in inclusive energy access: LNOB and Gender



Aligned with the 2030 Agenda for Sustainable Development, EnDev has developed a comprehensive approach to LNOB, aimed at reaching customer groups who are otherwise not reached by energy access markets. Since 2023, EnDev disaggregates LNOB-specific interventions and results. In 2024, EnDev countries transitioned into full-scale implementation, with ambitious targets set. The commitment to LNOB was further bolstered by the Top-Up Programming in 2024, which allocated additional funds to scale successful LNOB initiatives. Concurrently, EnDev is advancing gender equality and women's self-empowerment, with EnDev's Gender Strategy serving as a cornerstone for embedding gender-responsive

and transformative approaches across its portfolio.

EnDev's LNOB approach

EnDev's LNOB framework reflects its commitment to addressing discrimination and inequalities through context-specific approaches and measurable results. It targets the following LNOB groups:

- **Poorest of the poor:** As of mid-2024, over 301.9 million people in EnDev countries live in extreme poverty—many lacking energy access.¹¹
- **At risk communities in fragile contexts**¹²: Over 18.7 million people are forcibly displaced, including more than 5.7 million refugees, in EnDev

¹¹ [September 2024 global poverty update from the World Bank](#) and [Poverty and Inequality Platform](#).

¹² Previously this category consisted of people affected by displacement—refugees, internally displaced persons, and host communities—while conflict-affected communities were under the 'Other' category. EnDev has revised the LNOB framework to include conflict and displacement-affected groups under the same category.

countries.¹³ Displaced people and their host communities are among the most left-behind in terms of energy access. Additionally, EnDev works in fragile contexts to reach those affected by conflict.

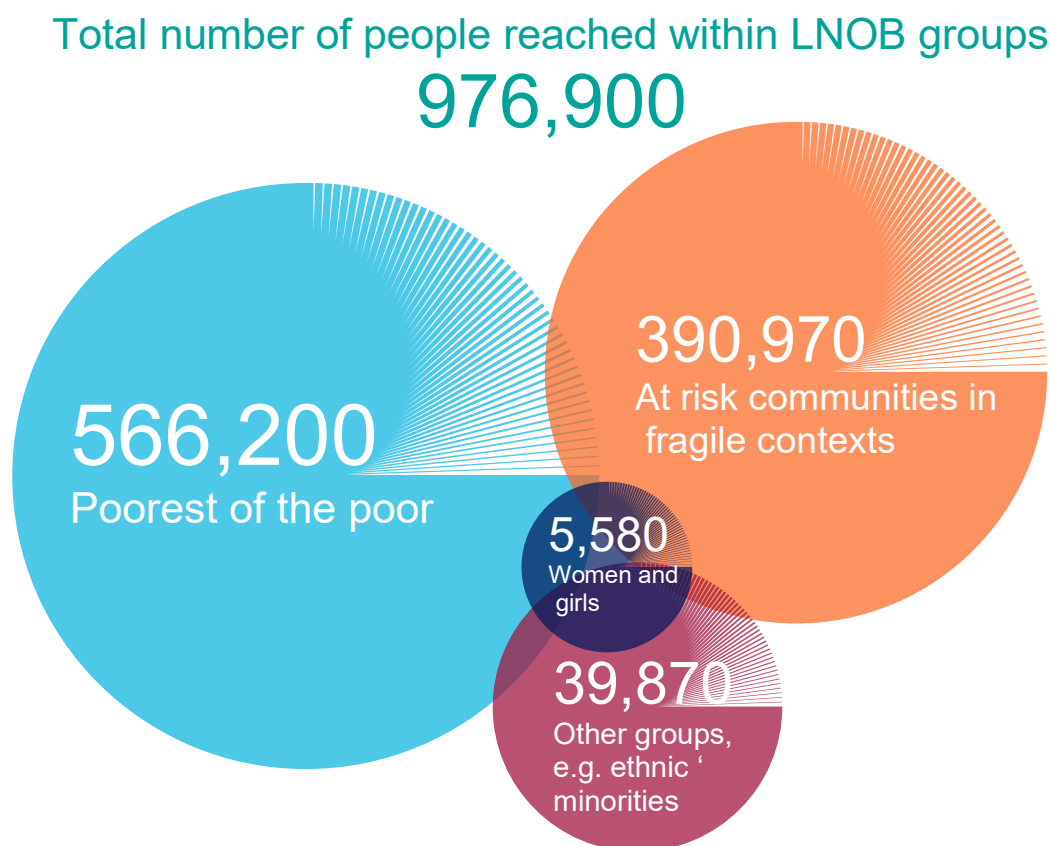
- **Women and girls¹⁵:** Women remain disadvantaged in energy access and access quality levels. EnDev promotes gender-responsive and transformative measures to address inequalities and to empower women in decision-making.
- **Other groups:** EnDev recognises that vulnerability is multifaceted and context-specific. The 'other' category allows EnDev country teams to identify any marginalised group that is left behind in terms of energy access. In 2024, this included indigenous people, ethnic minorities, people with disabilities, and remote communities.

EnDev's LNOB results in 2024

The full-scale implementation of dedicated LNOB interventions in 2024 has led to significant progress. In 2024 alone, 734,060 individuals from LNOB groups were reached. This marks a threefold increase compared to the 242,850 people in 2023. Overall, 976,900 people have gained energy access, representing 56% of the ambition of 1,751,830 people by the end of 2026, see also Figure 3-1.¹⁴

Additionally, 2,770 MSMEs and 690 social institutions operating in LNOB contexts, such as extreme poverty and displacement settings, were reached. It is anticipated that LNOB results will continue to increase throughout 2025 as implementation progresses across EnDev countries.

Figure 3-1 LNOB in EnDev



¹³ UNHCR (2024) [Mid-Year Trends](#).

¹⁴ Note that the ambition levels for LNOB and HTC refer to programming of EnDev core, while results comprise as well other funding lines targeting LNOB groups.

¹⁵ In terms of people reached, the 'Women and Girls' category refers specifically to vulnerable, female-led households. Gender disaggregated data across EnDev's results is provided below, see Figure 3-2.

A wide range of LNOB interventions are being implemented across EnDev countries, including e.g. efforts to expand markets into extremely poor, remote areas, to target vulnerable and/or displaced communities through results-based financing (RBF), and to reach customers living in highly fragile contexts.

The following examples highlight selected, successful LNOB approaches:

- **EnDev Tanzania** supported access to improved cookstoves for remote communities living in extreme poverty through a targeted behavioural change campaign and support for local stove production groups.
- **EnDev Nepal**'s RBF targeted marginalised social groups, indigenous people, female-headed households, and extremely poor households by providing demand-side subsidies for connections to community-led grids.
- **EnDev Laos** provided six institutional cookstoves to a school specialised for students with disabilities.

Key lessons from LNOB implementation

Targeted approaches such as demand-side subsidies or RBF have proven to be among the most effective interventions for reaching LNOB groups. However, data availability for identifying and targeting specific customers remains a key success factor. Furthermore, in light of global economic shifts, the affordability of energy products has become an even greater challenge, with purchasing power diminishing across large population segments. EnDev's RBF approaches have therefore adapted to ensure products are both affordable and accessible for those furthest left behind.

Significant results were also seen from fragile contexts, particularly Ethiopia, Mali, and Niger. In such contexts, remaining adaptable in project implementation, leveraging the knowledge and experience of local partners, and involving subnational governments and/or community organisations for needs-driven, community-based approaches have

proven critical for success. These interventions also necessitate consideration of the precarious economic situation facing conflict-affected communities.

EnDev's LNOB initiatives in 2024 made strides in improving energy access for marginalised communities, reducing energy inequalities, and fostering more inclusive development.

EnDev's gender ambition



In 2024, EnDev continued to enhance gender integration throughout its portfolio, ensuring that gender equality remains a central pillar of its mission to expand sustainable energy access. The programme adopts a comprehensive approach, focusing on supporting women-led businesses, increasing female employment in green jobs, and collaborating with feminist and women-led grassroots organisations. Gender considerations are embedded within the LNOB framework, ensuring a holistic approach to energy access.

EnDev advanced considerably in 2024 in scaling gender-transformative practices and in institutionalising gender equality across the portfolio.

Gender transformative approaches

In 2024, EnDev made significant strides in advancing gender-transformative approaches, focusing on activities that tackle gender inequalities and challenge social norms. In Tanzania and Malawi, EnDev has engaged men in cooking practices and facilitated dialogue among couples to shift traditional gender roles in household energy use.¹⁶ By actively including men in these discussions, the initiative fosters a more equitable division of responsibilities and promotes the adoption of clean cooking solutions. EnDev also collaborates with several women's organisations, such as with the *Ethiopian Women in Energy* association. By partnering with civil society and women's associations, EnDev strengthens the broader ecosystem needed to drive gender transformation in the energy sector.

¹⁶ See also: [Post](#) | [Feed](#) | [LinkedIn](#) | [Men in Cooking](#)

These collaborative efforts empower women economically and create an enabling environment for long-term systemic change.

Development of Gender Action Plans: To further institutionalise gender considerations and elevate EnDev's commitment, three additional countries—Rwanda, Burundi, and Liberia—developed Gender Action Plans in 2024. These plans operationalise the integration of EnDev's Gender Strategy. Countries with existing Gender Action Plans received support in implementation.

EnDev also launched the Gender Focal Point Exchange Platform, a dedicated space for all country-level Gender Focal Points to engage in structured peer-to-peer learning, exchange of best practices, and mutual support. This initiative has strengthened the capacity of country teams to respond effectively to gender-specific challenges within the energy sector.

Development of EnDev's Diversity Charter: EnDev has developed a Diversity Charter, reinforcing its commitment to an inclusive workplace. Additionally, the first internal diversity training for all EnDev managers was conducted, equipping leadership with strategies to embed diversity and gender equality in organisational and project-level decision-making.

Gender best practice collection: The Gender team conducted a comprehensive collection of gender best practices in 2024, highlighting successful approaches from across the EnDev portfolio. These case studies serve as a valuable reference for all EnDev teams aiming to implement effective gender-responsive and transformative interventions. Selected case studies were also published on the EnDev website.¹⁷



Benin

In Benin, EnDev partners with the *Women Energy Enterprises Association* to drive a gender-transformative expansion of the off-grid solar and clean cooking market in remote communities. The initiative strengthens collaboration among women entrepreneurs, provides targeted business training, and facilitates access to finance. One entrepreneur shares:

"Thanks to the support, I've been able to develop my solar equipment sales business and reach a wider market. Today, I'm actively contributing to the energy transition in my community."

So far, 25 women-led enterprises have received support, 50 female agricultural entrepreneurs have been introduced to clean energy solutions, and three business partnerships have been established. By embedding gender-transformative strategies into its approach, EnDev ensures that energy access is not just about infrastructure but about systemic change, challenging traditional gender norms, and building a more inclusive energy future.

¹⁷ [Breaking Barriers: EnDev Bolivia Empowers Women Entrepreneurs - EnDev](#)

Another significant impact of EnDev activities on women's well-being is linked to HTC solutions and improved indoor air quality. Since women are typically responsible for cooking, they benefit the most from cleaner cookstoves that reduce indoor air pollution. Based on the number of people reached with HTC solutions of Tier 3, it is estimated that approximately 202,000 women and 403,000 young children experience significantly lower exposure to harmful pollutants like particulate matter and carbon monoxide due to EnDev interventions.

Through these targeted initiatives and strategic frameworks, EnDev reinforced in 2024 its commitment to fostering inclusive practices within the energy sector.

By advancing gender-transformative approaches, promoting women's economic empowerment, and institutionalising gender equality across its operations, EnDev is not only addressing immediate gender disparities but also laying the foundation for long-term systemic change. These efforts contribute to a more equitable energy sector where both women and men benefit from sustainable energy access and economic opportunities. Moving forward, EnDev remains dedicated to strengthening gender integration and fostering an inclusive and just energy transition.

Figure 3-2 Gender in EnDev

Gender in EnDev: Key achievements

By December 2024

16.9 million

Women and girls have access to energy

6.9 million

Women and children have lower exposure to hazardous pollutants through clean cooking solutions

2,880

Health centres have access to energy improving services for women and children

34%

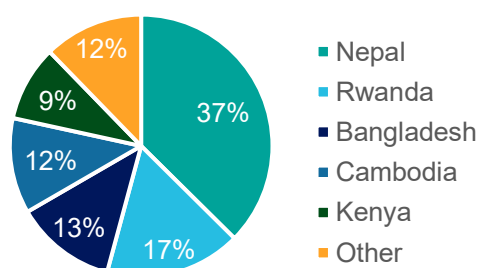
Of supported MSMEs in 2024 are led by women

3.3 Advancing clean cooking solutions: Higher-tier cooking



EnDev's commitment to HTC yielded substantial results in 2024: 245,710 people were reached, more than double the previous year. Five countries—Nepal, Rwanda, Bangladesh, Cambodia, and Kenya—accounted for 88% of the results in 2024, see also Figure 3-3. Cumulatively, EnDev has reached 1,008,060 people with HTC, equating to 76% of the ambition of reaching 1,325,140 people by 2026.

Figure 3-3 People with access to HTC in 2024



Total: 245,710 people

The increasing numbers show that with the necessary spark and incentive, markets and demand are taking up. The increase in HTC results also displays growing supply structures and an increasing market readiness, as well as improving framework conditions for market growth. The HTC technologies promoted by EnDev include eCookers, ethanol and biogas stoves, pellet gasifiers, and higher-tier biomass stoves (Tier 3 and higher). Among these, eCookers have become the most successfully promoted HTC solution, with access to eCooking increasing rapidly each year: from around 3,000 people in 2020 to 197,450 in 2024 alone, reaching a total of 363,740 people. The eCooking technologies supported by EnDev range from induction cookers and electric pressure cookers to fryers and kettles. In the Asian context, induction and rice cookers are predominant. In the African context, electric pressure cookers are the most-sold technology.

While most of the electricity supply for eCooking is provided via national grids,



Promotion of eCooking in Uganda

EnDev has explored the scaling potential and conditions for eCooking in off-grid areas in two countries: in the Democratic Republic of the Congo, EnDev pilots eCooking in a mini-grid, while in Nepal EnDev pilots eCooking with stand-alone PV systems.

Progress in establishing supportive framework conditions for eCooking is particularly notable in countries like Kenya and Uganda with underlying national eCooking strategies. Moreover, EnDev collaborates with national utilities, particularly in Kenya and Rwanda, to pilot and model tariff structures for electricity used for cooking, providing valuable insights for tariff design decisions. Additionally, in countries like Malawi and Ethiopia, EnDev supports the development of Clean Cooking and eCooking Roadmaps under the leadership of the respective Ministry of Energy.

To accelerate the electrification of cooking beyond EnDev, EnDev, in partnership with *Sustainable Energy for All* (SEforALL) and the *Modern Energy Cooking Services Programme* (MECS), set up the *Global eCooking Accelerator* (GeCA) in 2023, as part of the GeCCo. EnDev contributes its results toward GeCA's targets. GeCA's mid-term goal of reaching 500,000 people by the end of 2025 was already surpassed in 2024, with EnDev's eCooking initiatives reaching 363,740 people and an additional 201,800 reached through the associated SEE-CC project.

3.4 Scaling impact through strategic partnerships



In 2024, EnDev continued to prioritise the enhancement of strategic partnerships to accelerate sustainable energy access worldwide. By collaborating with governments, the private sector, civil society, and international initiatives, EnDev ensured its work was in line with global efforts to achieve *Sustainable Development Goal (SDG) 7* and to provide reliable energy to those most in need. The year also proved pivotal for energy access more broadly, with the further development of platforms such as the GeCCo and the launch of new initiatives like the *Mission 300* of the *World Bank Group* and the *African Development Bank*.

Since its launch at COP28, GeCCo has emerged as the leading initiative for advancing eCooking solutions globally. Through strong collaboration between the four anchor partners—EnDev, SEforALL, MECS and the *Global Energy Alliance for People and Planet (GEAPP)*—and in cooperation with a growing network of members (currently more than 25 international organisations), GeCCo became a competent source of guidance for the promotion of eCooking and the implementation of respective policy advisory and market development. In partnerships with governments, industry players, and civil society organisations, GeCCo supports the development of national eCooking strategies (like in Kenya and Uganda) and advocates for the integration of eCooking into national energy policies and plans. The initiative has secured Letters of Intent from the governments of Laos, Nigeria, Sierra Leone, and Somalia, mandating GeCCo to provide consulting support for scaling up eCooking in these countries. Additionally, GeCCo has conducted readiness assessments in Laos, Nigeria, Sierra Leone, Ghana, and India to gauge the potential for eCooking adoption. GeCCo is also supporting the creation of an eCooking roadmap in Malawi. As one of GeCCo's founding members, EnDev spearheads the implementation of eCooking activities across 15 countries, focusing on capacity building, stakeholder engagement, and market activation through awareness

creation, supply chain support, and results-based financing. These efforts reflect the growing recognition of eCooking as a transformative solution for clean cooking in the Global South.

In 2024, GeCCo and EnDev jointly organised a GeCCo side event during the EnDev Global Knowledge Exchange workshop in Uganda (see also page 28). This side event convened EnDev implementers worldwide as well as strategic partner organisations, such as SEforALL, MECS, the *African Development Bank*, and GOGILA. The teams from EnDev Rwanda, Uganda and Kenya presented their approaches and experiences in the implementation of eCooking interventions, and shed light on the GeCCo collaboration in practice on the ground.



GeCCo partners discuss necessary transition efforts for eCooking.

GeCCo partners also engaged with the *Mission 300* initiative to explore opportunities and advocate for the integration of eCooking. This was successful, as eCooking—and clean cooking more broadly—has become an integral part of *Mission 300* and respective National Energy Compacts.

Building on its engagement with global initiatives, EnDev further strengthened its focus on carbon markets throughout 2024. In addition to ongoing voluntary carbon market projects led by partners such as *Association pour le Développement de l'Energie Solaire (ADES)*, *Association of Volunteers in International Service (AVSI)*, and *Netherlands Development Organisation (SNV)*, EnDev developed and published comprehensive internal guidelines to help country teams engage key stakeholders—both national and

international—including carbon developers and partner governments. These guidelines aim to foster an enabling environment for carbon finance in target countries. By integrating carbon finance into its broader market-based strategy, EnDev seeks to bolster the financial sustainability of clean energy solutions, thereby advancing its mission to expand energy access in underserved regions.

In the area of LNOB, EnDev's *Demand-Side Subsidies Component* expanded its impact through strategic partnerships with financial institutions, development organisations, local businesses, and government programmes. With the support of local implementing partners, the *Demand-Side Subsidies* pilots in Malawi and Niger were launched in 2024 and all countries recorded first sales. Collaborations were also key to strengthening supply chains, improving business capabilities, while ensuring donor coordination.

Together with the Liberian government and *World Bank Group*, EnDev implements a joint supply- and demand-side RBF to holistically strengthen the market in Liberia. Partnerships with *Bloom Bank* to provide business development support and with manufacturers to address stock shortages also facilitated the implementation of the pilot.

In Malawi, the collaboration with the *World Bank Group's Malawi Energy Access Project* helped to align subsidy efforts and prevent double counting through data exchanges. At company level, partnerships played an important role, as improved cookstove companies teamed up with off-grid solar firms to expand distribution.

In Niger, EnDev partnered with *Mercy Corps* and *United Nations High Commissioner for Refugees* (UNHCR) to engage local authorities and refugee communities—two key actors for ensuring buy-in and acceptance—in preparation for the *Demand-Side Subsidies* rollout. Exchanges with the *World Bank*

Group focused on scoping opportunities for future alignment and collaboration with the *Niger Accelerating Electricity Access Project*.

In Uganda, the *Demand-Side Subsidy Component* also aligned closely with programmes such as *Beyond the Grid Fund for Africa* and the *World Bank Group's Electricity Access Scale-up Project*. Specifically, EnDev and the *Electricity Access Scale-up Project* aligned on subsidies and are developing an automated data exchange to ease the prevention of double counting.

At the global level, EnDev continued to engage with partners such as the *World Bank Group's Energy Sector Management Assistance Program*, GOGLA and the *Clean Cooking Association* through the *End-User Subsidy Lab*, which published a toolkit on designing responsible end-user subsidies with EnDev's input. The *Demand-Side Subsidies Component* and its learnings were also showcased in *End-User Subsidy Lab* webinars and at key international events, including the *Humanitarian Energy Conference* and GOGLA's *Global Off-Grid Forum*.



Mika Eneleti (Malawi) receiving her first solar home system thanks to Demand-Side Subsidies.

By engaging in these partnerships and initiatives, EnDev reinforced local market ecosystems, addressed the affordability gap, leveraged its experience through a global learning network, often taking a lead role in sector transformations towards sustainable energy access.

3.5 Monitoring, Evaluation, and Learning and Innovation

Monitoring



EnDev continues to strengthen its results-driven approach by consistently improving its monitoring methods. In response to evolving international standards, EnDev updated its methodology for calculating climate impacts in 2024. These updates include the latest UNFCCC framework adjustments, ensuring alignment with internationally recognised emission calculation methodologies. Specifically, EnDev reviewed its calculations, revised default values for baseline emissions, and, where necessary, refined the underlying methodology.

Further advancing its monitoring capabilities, EnDev developed a methodology to refine climate impact assessments and employment created by the distribution of eCooking solutions. The updated approach for the calculation of climate mitigation was applied for the first time in 2024, providing valuable insights into the emissions reductions achieved through modern cooking technologies. Additionally, the reporting framework now includes climate impact assessments for appliances such as solar-powered irrigation pumps, contributing to a more comprehensive understanding of EnDev's environmental benefits, see also chapter 2.3 Energising Climate: Combating climate change.

Evaluations



In 2024, multiple studies and evaluations were conducted to assess EnDev's impact and examine the sustainability, effectiveness, efficiency, relevance, and additionality of its interventions. The findings from these assessments serve as a basis for reflecting on EnDev's approaches and enhancing its implementation.

EnDev engaged in a real-time evaluation for the period of 2020 to 2023, carried out by an independent evaluation consortium of *PricewaterhouseCoopers Advisory*, the *Vrije Universiteit Amsterdam*, and *SEO Amsterdam Economics*. In 2024, the final report was completed, providing overall conclusions,

main lessons, and recommendations. The evaluation assessed EnDev against the OECD-DAC criteria, and the results were used to refine and strengthen EnDev's strategy and implementation. The results indicate that EnDev is highly relevant and coherent in addressing the energy needs of households, with growing focus on vulnerable groups. EnDev's effectiveness in expanding energy access is rated positively, as reflected in a significant number of energy access solutions disseminated and geographic areas reached.



As part of the real-time evaluation, EnDev collected data on the impact, relevance, and sustainability of its measures in countries such as Bolivia.

Regarding efficiency, EnDev's average expenditure between 2020 and 2022 was EUR 16 per person reached, remaining well below the EnDev benchmark of EUR 20 per person reached. EnDev's overall impact is rated moderate to considerable, with the strongest impact on SDG 7. In terms of market transformation, the evaluation finds that while EnDev is tackling the right barriers, further effort is needed to enhance an enabling environment, improve the access to finance for companies and consumers, and promote implementing standards and quality certifications. It should be noted, that EnDev has already taken action to respond to these findings, including through new EnDev global instruments such as the *Energy Enterprise Coach*, the *Global Enabling Environment Facility*, and the *SME Finance Facilitator* (see also boxes on page 12 and 14). The programme's sustainability is assessed as moderate to considerable, scoring higher at the overall portfolio level than on the five country case studies conducted. A key strategic learning, recognised by the



programme and confirmed by the external evaluation, is the challenge of balancing a market-driven approach with the LNOB ambition. To address this, the evaluation team recommended that EnDev continues to support both lower and higher-tier technologies, further innovate on LNOB approaches, and systematically evaluate their effectiveness. EnDev has already acted on these recommendations, including initiating innovation funds to foster innovative LNOB approaches. These insights provided valuable direction for EnDev's strategy, ensuring an inclusive and impactful approach to energy access.

Furthermore, in 2024, [summaries](#) of the phase-out country studies conducted in the period of 2021–2023 were finalised by *Edburgh Consultants* and *Danish Energy Management*. These studies assessed the impact of EnDev on market transformation and sector development, as well as the sustainability of the results achieved in countries where EnDev recently ended its engagement.

EnDev's commitment to continuous improvement is also reflected in its strategic alignment with independent evaluations. In 2023, the *German Institute for Development Evaluation*, conducted an independent

sectoral assessment of Germany's overall efforts (including EnDev) to expand energy access in rural Africa. Rather than evaluating a single project, the assessment examined the German portfolio in this sector to provide strategic guidance for future German interventions. The evaluation focused on the effectiveness, sustainability, and relevance of the German portfolio, with a particular emphasis on decentralised energy solutions and their impact on local communities. Data was collected in Benin, Uganda, and Senegal to derive evidence-based recommendations. The evaluation rates the portfolio as partially relevant, effective, and sustainable, with outcomes varying by country.

Recommendations highlight the importance of aligning projects with the needs of women and vulnerable groups, strengthening the promotion of productive energy use, and enhancing long-term sustainability of decentralised energy solutions. These insights align with EnDev's ongoing implementation efforts. Throughout its trajectory, EnDev has strategically and continuously refined its approach to better address the needs of women, girls, and vulnerable populations. The programming prioritises a dedicated LNOB approach, tackling discrimination and inequality through context-specific


Exit Evaluation of EnDev Vietnam - biodigesters

Executive summary

From 2013 – 2020, Energising Development (EnDev) promoted small-scale biodigesters in Vietnam to increase energy access and clean cooking in rural areas. The project:

EnDev contracted Edburgh consultants and Danish Energy Management to conduct an independent exit evaluation of EnDev Vietnam. The main evaluation questions were:


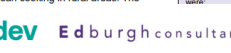
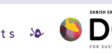
- 1) What influence did EnDev's intervention have on sector development?
- 2) To what extent are local institutions ready (and have the capacity) to take over and contribute to developing a sustainable energy market?
- 3) What are the lessons learnt?

Exit studies are carried out during or shortly after a project or component has been phased out. This mostly desk-based evaluation was carried out between July and November 2023. The evaluation is based on an analysis of 28 relevant reports and studies, and 17 interviews with important stakeholders. The report is based on absolute numbers of sales on country level. On global level, EnDev applies so called monitoring factors for attribution, additionally and sustainability and reports in adjusted numbers of people reached.

The approaches in the EnDev Nepal ICS component included results-based financing support (RBF) for cookstove suppliers, raising awareness through demonstration activities, collaboration with local partner organisations, local governments and local retailers, building last-mile distribution through market agents, and partnering with local microfinance institutions (MFIs) and cooperatives for end-user financing and distribution.

Supply-side observations

EnDev has strengthened local value chains by supporting last-mile distribution, including local stakeholders, and raising awareness in Central and Western Nepal communities.

Ex-post Evaluation of EnDev Indonesia - mini-grids

Executive summary


From 2005-2019, Energising Development (EnDev) promoted electrification via hy grids and small-scale biogas. This project was implemented under the International Development Cooperation (IDC) in 2021, an exit evaluation component was carried out. This aims to understand the status quo since EnDev's exit in 2021. The 2021 exit study. Development (EAMD) tool is


Background

EnDev Indonesia supported grids via various activities assistance and policy advice training, mentoring and work entrepreneurial skills of rural t managers. EnDev Indone partnership with the Indonesi the Directorate of New and R Efficiency under the Minist Resources (MEMR).

Supply-side observations

Several off-grid, renewable business models exist in government's strategy development led by the p Some lessons learnt from it are less relevant today, as to the community-manage less common. EnDev Indonesia supported 1





Exit Evaluation of EnDev Bolivia - grid densification and PUE

Executive summary

Since 2006, Energising Development (EnDev) has supported various technological solutions to increase access to modern energy sources in Bolivia. These include grid densification, photovoltaic (PV) lamps, solar home systems, productive use of energy (PUE) and improved cookstoves. EnDev Bolivia is currently being phased out. The project will end in June 2024. This evaluation focuses on the impact and sustainability of the grid densification and PUE components. This project is implemented by Gesellschaft für Internationale Zusammenarbeit (GIZ).

Background

When EnDev Bolivia started, only 33% of the rural population had access to electricity. In 2014, the government adopted a plan to reduce poverty and ensure universal electricity access by 2025. EnDev contributed to this goal by collaborating with the national electricity company ENDE to expand higher-tier electrification to remote rural areas. The collaboration involved procuring high-quality electrical equipment and providing training for ENDE, its subsidiaries and rural electricity cooperatives. As a result of the national government and its partners' efforts, including EnDev Bolivia, 83% of rural households now have access to electricity. EnDev Bolivia supported improving entrepreneurs', associations', and cooperatives' production capacities by increasing their access to modern energy and productive technologies. Support included technical guidance, capacity building and financial incentives. The project also aimed to strengthen PV markets in rural areas through the deployment of solar home systems and mini-grids for micro, small, and medium-sized enterprises. EnDev Bolivia developed and implemented 2 technical and financial assistance funds to support increased energy

EnDev contracted Edburgh consultants and Danish Energy Management to conduct an independent exit evaluation of EnDev Bolivia. The main evaluation questions were:

- 1) What influence did EnDev's intervention have on sector development?
- 2) To what extent are local institutions ready (and have the capacity) to take over and contribute to developing a sustainable energy market?
- 3) What are the lessons learnt?

Exit studies are carried out during or shortly after a project has been phased out. This mostly desk-based evaluation was carried out between July and November 2023. The evaluation is based on an analysis of 17 relevant reports and studies, and 27 interviews with important stakeholders. The report is based on absolute numbers of sales on country level. On global level, EnDev applies so called monitoring factors for attribution, additionally and sustainability and reports in adjusted numbers of people reached.

EnDev Bolivia

Project period: 2006 – 2024

Budget: EUR 20,190,000

Project results (as of Q1 2023)

- Improved electricity connections for 130,723 households and 1,529 social institutions by installing new energy meters and replacing old or faulty equipment.
- Supported the installation of PV systems for 23,188 households and 342 social institutions.
- Contributed to the uptake of 23,554 units of primary production equipment and 16,417 product transformation machines.

Selection of phase-out country studies

interventions. The evaluation's findings also highlighted the need for maintenance strategies, affordability, and integration with national policies. Strong partnerships are key to achieving SDG 7 and mobilising the necessary investments. EnDev exemplifies how multi-donor collaboration enables coherent and impactful interventions. Its long-standing partnership between BMZ, DGIS, Norad, and SDC ensures a harmonised and effective implementation, reinforcing EnDev's role in driving sustainable energy access. These findings underscore the importance of continuously adapting to the evolving needs of local communities, and highlight EnDev's role in shaping effective, inclusive energy access solutions for the future.

The findings of the evaluations were shared and discussed at EnDev's Global Knowledge Exchange Event in September 2024 in Uganda (see also on page 28). Participants analysed the lessons learnt and their relevance for EnDev's future work. The discussions highlighted EnDev's consistent ability to adapt to evolving environments and incorporate evaluation recommendations into its approaches.

Learning and Innovation



In 2024, EnDev remained committed to learning and innovation as a core driver of scalable energy access solutions. Through the EnDev Innovation Window and the EnDev Learning and Innovation Agenda, EnDev fosters new approaches, tests innovative technologies, and promotes knowledge sharing across stakeholders in the energy access space.

The EnDev Innovation Window in 2024 marked the launch of its second cycle, during which six new innovative pilot projects were selected in a competitive approach throughout the year. These pilots began their implementation under EnDev in the second half of 2024 and will continue throughout 2025. In Bangladesh, SNV will explore combining demand-side subsidies with referral rewards to drive the adoption of eCooking technologies, with a focus on reaching vulnerable consumers. In the Democratic Republic of the Congo, AVSI

will test the integration of induction hobs with existing energy access infrastructure to promote the widespread adoption of eCooking, while also identifying sustainable business models for energy utilities. In Ethiopia, SNV will focus on improving access to solar-powered irrigation systems for smallholder farmers by introducing innovative financial mechanisms, addressing challenges on both the supply and demand side. In Kenya, GIZ will integrate "Internet of Things"-enabled solar appliances with financing systems to support smallholder farmers and micro-enterprises, reducing risks for financial intermediaries. Also in Kenya, GIZ aims with another initiative to explore new tariff structures using smart meters to reduce the cost of cooking with electricity, making it more affordable for households. Lastly, in Rwanda GIZ will pilot a financial rebate system for eCooking, targeting urban and peri-urban households, while leveraging carbon finance to drive the transition to clean cooking. These EnDev projects address challenges such as affordability, access to financing, and the integration of new technologies, providing key insights that will contribute to scaling energy access solutions.



A woman cooks with an eCooking device as part of a pilot testing affordable access for vulnerable customers in Bangladesh.

The second cycle of EnDev's Learning and Innovation Agenda continued to evolve in 2024, building on the progress made in 2023. Focusing on the themes Digitalisation for Scale and Innovative Finance, this cycle sought to refine and share insights from previous workshops and deep-dive sessions through two new knowledge products, examining the role of digital technologies in scaling energy access and explore financial innovations that can bridge funding gaps in

the sector¹⁸. Key lessons include the importance of innovative finance mechanisms in addressing barriers to investment readiness, the challenges in bridging the financing gap for energy access companies, and the potential for digitalisation to enhance efficiency and impact. These findings were presented to EnDev's implementing structure and at relevant SDG 7 events, including Intersolar Europe and the International Conference on Solar Technologies. Through these activities, EnDev continues to share valuable insights and foster cross-sector collaboration, helping stakeholders stay informed and adapt to the changing landscape of energy access.

In 2024, EnDev's Learning and Innovation efforts were also significantly advanced through the second EnDev Global Knowledge Exchange Event, held in Uganda in September. This event brought together around 70 EnDev experts and partners such as MECS, GOGLA, SEforALL, and *Mercy Corps*, providing a key platform for exchanging knowledge and co-developing innovative energy access solutions.

Over three days of dynamic discussions, along with two days of specialised side events on demand-side subsidies, carbon markets, and eCooking, participants refined energy access strategies and shared valuable insights. Uganda's Ministry of Energy, along with other government representatives, emphasised its commitment to electrification and clean cooking, setting the stage for a continued collaboration.



Global Knowledge Exchange Uganda, session on EnDev's success stories

In addition to insights from EU and Netherlands Embassy representatives, the event underscored the importance of in-presence exchanges for peer-to-peer learning and provided valuable input for EnDev's analysis of sector needs, which will be concluded in 2025 ("Strategic Stocktaking").

EnDev's continued focus on learning, innovation, and collaboration enables the programme to refine its energy access approaches and respond to the evolving needs of local communities. Through ongoing evaluations, pilot projects, and knowledge exchanges, EnDev seeks to enhance its impact, address emerging challenges, and contribute to the sustainable and inclusive expansion of energy access.

¹⁸ See [Energising Tomorrow: Scaling up Energy Access with Digital Solutions](#) and [Innovative Finance for Energy Access](#).

4 Report and Accounts

In 2024, EnDev successfully secured an additional EUR 8 million of funds, comprising contributions from SDC and BMZ. An additional EUR 17 million of funds from DGIS was commissioned for the year 2026.

4.1 Overview

In 2024, EnDev marked a successful year in securing additional funds, comprising contributions from SDC and BMZ. Specifically, EnDev was commissioned with EUR 8.01 million, including interest and exchange-rate fluctuation adjustments. Additionally, commissioned funds increased in the beginning of 2025 by an additional EUR 17 million that DGIS already pledged in 2023 for the year 2026. As a result, EnDev's total available funds through the end of 2026 now amount to EUR 604.40 million, of which EUR 604.12 million have already been allocated.

Expenditures in 2024 reached EUR 43.81 million, an increase from the three-year annual average of EUR 37.54 million. By the end of 2024, total expenditures reached EUR 501.80 million, leaving an allocated amount of EUR 102.6 million available. Of this, EUR 59.11 million is designated for planned core activities under the last *Multi-Annual Indicative Programming*, and EUR 34.70 million is for co-financed activities until the respective co-financing contracts conclude.

Table 4-1 Global budget and funding

Allocation of total budget	in EUR
Allocated to country projects	528,219,014
Allocated to programme management level	75,901,000
Total allocated budget	604,120,014
Total available funds incl. BMZ commission as of March 2025	604,405,250
Remaining funds	285,236

4.2 Funds

As of end 2024, BMZ had commissioned the amount of EUR 587.10 million. Table 4-2

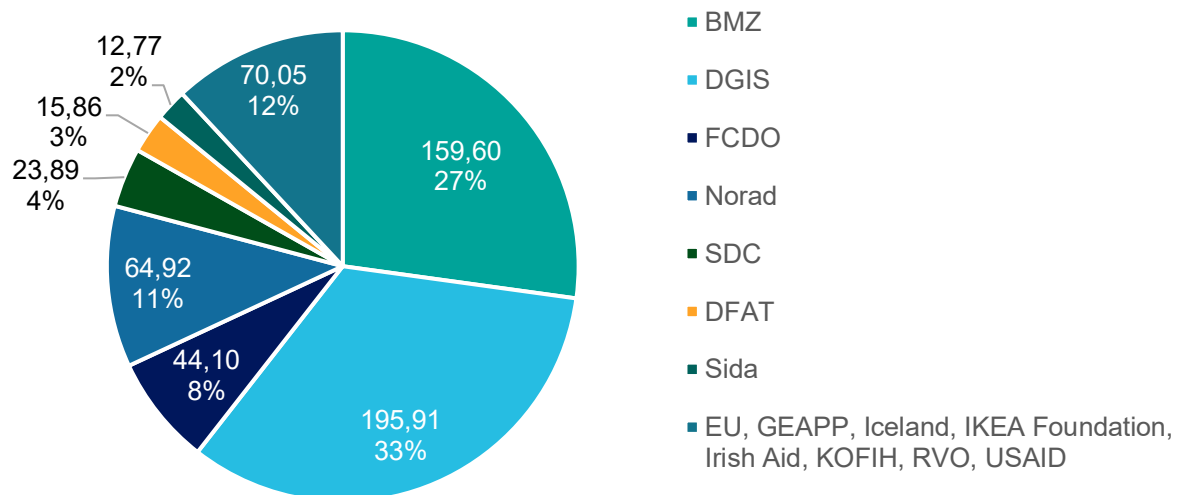
and Figure 4-1 show the commissioned funds by donor.

Table 4-2 Funds by donor (in EUR)

Donors	2022	2023	2024
BMZ	153,095,220	153,095,220	159,595,220
SDC	22,379,190	22,379,190	23,893,218
DFAT	15,858,077	15,858,077	15,858,077
DGIS	150,879,138	195,908,737	195,908,737
FCDO RBF	50,216,000	42,054,980	42,054,980
Norad (MFA)	52,199,307	64,921,307	64,921,307
Sida	12,774,794	12,774,794	12,774,794
EU	30,020,014	36,020,014	36,020,014
FCDO Bangladesh	2,049,360	2,049,360	2,049,360
GEAPP	0	3,760,000	3,760,000
Iceland	715,000	1,715,000	1,715,000
IKEA Foundation	8,000,000	8,000,000	8,000,000
Irish Aid	3,944,943	3,947,475	3,947,475
KOFIH	684,000	684,000	684,000
RVO	9,281,773	12,981,773	12,981,773
USAID	2,967,140	2,938,407	2,938,407
Total	515,063,957	579,088,335	587,102,363

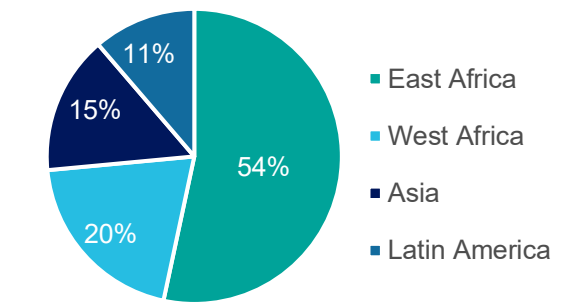
Note: Differences due to rounding are possible.

Figure 4-1 Funds by donor (in million EUR)



In 2024, EnDev’s geographic focus continued shifting towards sub-Saharan Africa, as highlighted in chapter 2. This trend is also evident when looking at the funding by region, where sub-Saharan Africa’s share of funds is 74% (54% in East-Africa and 20% in West Africa), see Figure 4-2.

Figure 4-2 Funds by region since 2009



The previously observed trend towards earmarked funds from co-financings (e.g. Iceland, *Irish Aid*, *Korea Foundation for International Healthcare* (KOFIH), RVO, the *United States Agency for International Development* (USAID), EU, GEAPP, *IKEA Foundation*) has continued. In 2024, 72.66% of funds were not earmarked and thus available for core financing, while 27.34% of funds were earmarked (7.16% FCDO RBF, 20.18% bilateral co-financings and soft earmarking for technologies and/or countries), see Figure 4-3.

See Table 4-3 on the following page for an updated list of the funds according to the latest BMZ commission, as well as available funds, expenditures, and income.

Figure 4-3 Funds by type

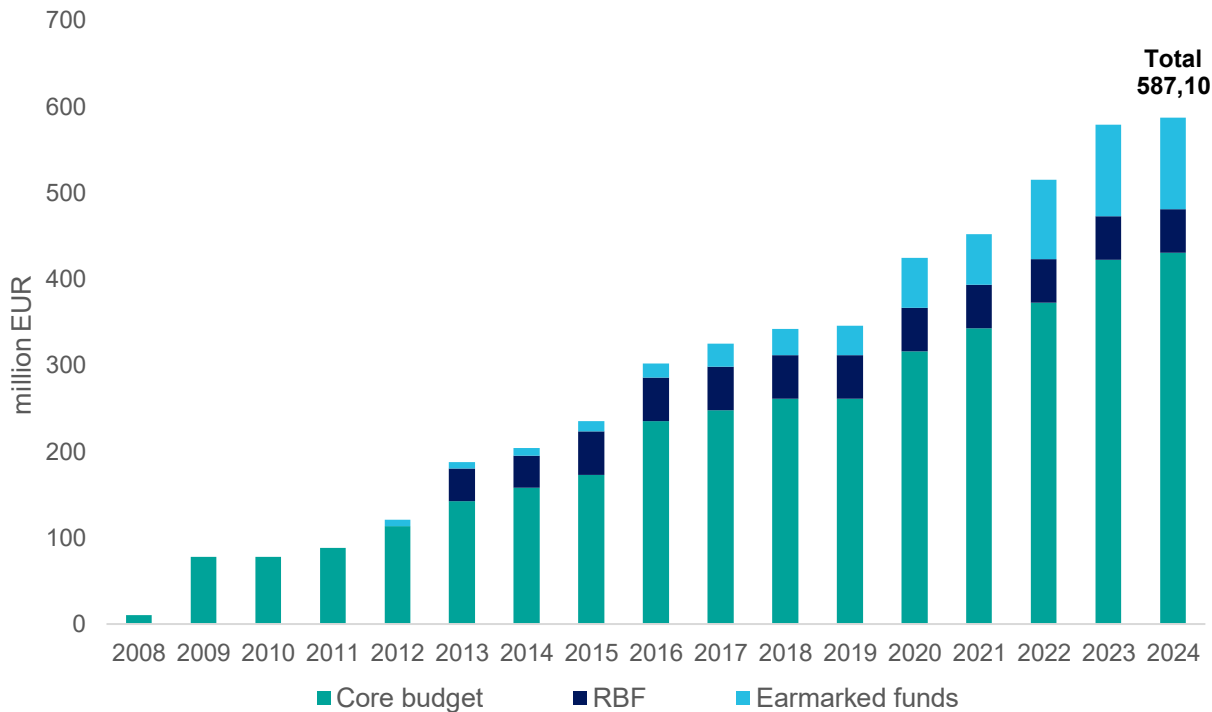


Table 4-3 Funds according to BMZ commission, available funds, expenditures, and income (in EUR)

Donors	Funds according to BMZ commission	Total available funds ^{a)}	Expenditures as of 12/2024	Income as of 12/2024
Consultative Group				
BMZ	159,595,220	159,595,220	149,280,316	149,280,316
SDC	23,893,218	23,884,661	23,208,604	22,924,222
DFAT	15,858,077	15,858,077	15,858,077	15,858,077
DGIS	195,908,737	195,908,737	144,905,691	174,408,737
FCDO RBF	42,054,980	42,054,980	42,668,908 ^{b)}	42,054,979
Norad (MFA)	64,921,307	65,156,756	59,638,339 ^{b)}	63,036,423
Sida	12,774,794	12,774,794	12,841,907 ^{b)}	12,774,794
Total funds of Consultative Group	515,006,333	515,233,225	448,401,842	480,337,548
Additional donors				
EU	36,020,014	36,020,014	28,494,931	33,465,473
FCDO Bangladesh	2,049,360	2,049,360	2,038,615	2,049,360
GEAPP	3,760,000	3,932,545	781,846	2,822,467
Iceland	1,715,000	1,761,835	1,064,879	1,715,000
IKEA Foundation	8,000,000	8,000,000	6,238,355	8,000,000
Irish Aid	3,947,475	3,947,475	3,976,993 ^{b)}	3,947,475
KOFIH	684,000	684,000	697,366 ^{b)}	684,000
RVO	12,981,773	12,931,551	7,227,758	9,726,051
USAID	2,938,407	2,845,245	2,877,043	2,938,407
Total funds of additional donors	72,096,029	72,172,025	53,397,786	65,348,233
Total	587,102,362	587,405,250	501,799,629	545,685,781

Note: Differences due to rounding are possible.

a) Due to contributions in foreign currencies (Swiss francs (CHF), British Pound (GBP), Norwegian krone (NOK), US Dollar (USD)), an amount of EUR 0.303 million is reserved for the exposure to exchange rate fluctuations, resulting in available funds of EUR 587.405 million in comparison to commissioned funds of EUR 587.102 million until the end of 2024.

b) Expenditures to be corrected at the end of the project.

4.3 Expenditures and income by donor

EnDev's expenditures, income, and funds by donor, by type, and

by country are presented in the following tables.

Table 4-4 Expenditures by donor (in EUR)

	2009–2021	2022	2023	2024	Total
BMZ	111,071,817	19,315,057	7,064,098	11,829,344	149,280,316
SDC	16,440,815	219,577	4,743,861	1,804,351	23,208,604
DFAT	15,858,077	0	0	0	15,858,077
DGIS	112,375,145	7,032,951	14,633,219	10,864,376	144,905,691
FCDO RBF	43,546,823	-836,798	-41,346	229	42,668,908
Norad (MFA)	46,114,300	6,281,581	-135,675	7,378,133	59,638,339
Sida	12,869,085	-4,775	-22,403	0	12,841,907
EU	12,405,482	4,153,186	4,689,403	7,246,860	28,494,931
FCDO Bangladesh	2,086,262	-47,590	-57	0	2,038,615
GEAPP	0	0	455,678	326,168	781,846
Iceland	495,336	224,080	122,465	222,998	1,064,879
IKEA Foundation	994,616	2,429,069	1,506,247	1,308,423	6,238,355
Irish Aid	3,999,134	46,524	-72,361	3,696	3,976,993
KOFIH	704,118	286	-68,063	61,024	697,366
RVO	1,540,213	932,494	2,282,901	2,472,151	7,227,759
USAID	2,178,372	286,135	118,155	294,381	2,877,043
Total	382,679,595	40,031,777	35,276,122	43,812,135	501,799,629

Note: Differences due to rounding are possible.

Table 4-5 Income by donor (in EUR)

	2009–2021	2022	2023	2024	Total
BMZ	111,071,817	19,315,057	7,064,098	11,829,344	149,280,316
SDC	16,755,426	1,976,871	2,099,958	2,091,968	22,924,222
DFAT	15,858,077	0	0	0	15,858,077
DGIS	114,658,737	9,000,000	25,000,000	25,750,000	174,408,737
FCDO RBF	43,026,004	-971,025	0	0	42,054,979
Norad (MFA)	47,333,269	4,866,038	8,494,372	2,342,744	63,036,423
Sida	12,774,794	0	0	0	12,774,794
EU	14,380,875	6,504,281	4,493,623	8,086,694	33,465,473
FCDO Bangladesh	2,049,360	0	0	0	2,049,360
GEAPP	0	2,822,467	0	0	2,822,467
Iceland	715,000	0	1,000,000	0	1,715,000
IKEA Foundation	5,459,954	2,540,046	0	0	8,000,000
Irish Aid	3,947,475	0	0	0	3,947,475
KOFIH	684,000	0	0	0	684,000
RVO	3,540,773	1,253,500	2,609,778	2,322,000	9,726,051
USAID	2,963,705	0	-25,298	0	2,938,407
Total	395,219,266	47,307,235	50,736,531	52,422,749	545,685,781

Note: Differences due to rounding are possible.

Table 4-6 Funds and expenditure by type and country since 2009 (in EUR)

EnDev	Funding	Expenditures
EnDev programme total available funds	604,405,250	501,799,629
Total funding	604,120,014	
Remaining available funds	285,236	
Programme management and cross-cutting activities	Funding	Expenditures
Total	75,901,000	53,274,923
Management, monitoring, backstopping, learning, etc.	50,297,000	38,554,550
Globally managed country activities (SCCIF, SIINC, IKEA, etc.)	13,100,000	10,784,813
Globally managed extra activities (refugees, RBF preparations, etc.)	4,004,000	3,935,560
Innovation impact RBF	8,500,000	0
Country activities	Funding	Expenditures
Total	446,086,000	367,950,240
Bangladesh	29,153,000	27,952,027
Benin	31,094,000	23,591,947
Bolivia	20,050,000	19,991,340
Burundi (from 01/2021)	1,742,000	1,175,309
Cambodia	6,850,000	5,823,692
Democratic Republic of the Congo	2,978,000	2,333,060
Ethiopia	54,810,000	48,586,693
Kenya	39,119,000	32,620,490
Laos	3,810,000	1,965,583
Liberia (with Guinea until 12/2023)	16,911,000	12,720,377
Madagascar	2,925,000	2,034,977
Malawi	28,990,000	18,555,596
Mali	20,600,000	16,165,534
Mozambique	42,091,000	38,355,781
Nepal	14,812,000	11,672,192
Niger	5,420,000	1,030,620
Rwanda (incl. Burundi until 12/2020)	34,824,000	30,646,414
Senegal	33,337,000	28,189,525
Sierra Leone	9,049,000	5,639,676
Tanzania	16,581,000	14,450,597
Uganda	30,940,000	24,448,812
Completed activities	Funding	Expenditures
Total	82,133,014	80,574,466
Burkina Faso	7,020,000	7,016,450
Cambodia (until 11/2019)	3,150,000	3,059,464
Central America (Guatemala, Honduras, Nicaragua)	17,780,000	17,757,166
Ghana	3,845,000	3,661,218
Indonesia	16,486,000	16,419,966
Mongolia	496,000	495,046
Peru	17,189,000	17,120,742
Vietnam	4,427,000	4,329,938
RBF 3: Mozambique, Rwanda, Uganda	2,835,000	1,833,224
RBF 3: Bangladesh, Kenya, Rwanda, Tanzania, Uganda	5,528,000	5,505,260
RBF 3: Kenya, Tanzania, Uganda	1,576,000	1,575,947
ProCEAO (EU West Africa: Burkina Faso, Benin, Senegal)	1,800,014	1,800,015

Note: Differences due to rounding are possible.

5 Annexes

- A. Results overview
- B. Country overview
- C. Country project status

A. Results overview

Table A-1 and Table A-2 provide an overview of the main quantitative results of EnDev by the end of 2024.

Table A-1 Access to energy results

		2023 total	Additional in 2024	2024 total
People [million]	People with access to modern energy	31.6	2.3	33.9
	People with access to thermal energy	24.2	1.9	26.1
	People with access to electrical energy	7.4	0.4	7.8
Social institutions	Social institutions with access to modern energy	33,940	1,540	35,480
	Schools with access to modern energy	20,310	460	20,770
	Health centres with access to modern energy	2,390	490	2,880
MSMEs	MSMEs with access to modern energy	102,820	10,610	113,420
Value for money	Expenditure efficiency per year	12.2	-	18.9

Table A-2 Climate and employment results






		2023 only	2024 only
Employment effects ¹⁹	People with jobs total	32,610	32,780
	People with jobs in cooking technology production	6,730	4,840
	People with jobs in cooking technology distribution	1,260	1,170
	People with jobs in solar system distribution	910	900
	People with jobs in mini-grid operation	6,040	6,080
	People with jobs in MSMEs	17,670	19,790
Climate	Annual CO ₂ e mitigated [in million tonnes]	2.91	3.02
	CO ₂ e mitigated in total [in million tonnes]	25.13	28.15

Note: Differences due to rounding are possible.

¹⁹ Employment effects are reported as „people with employment“. Until 2019 full-time-equivalents were used.

B. Country overview

Table B-1 Countries and technologies in 2024

	Thermal energy		Electrical energy		
	Biomass technologies 	Clean fuel technologies 	Off grid solar systems 	Mini-grids / Nano-grids 	Grids 
	All biomass technologies across Tiers 1–3, incl. pellet gasifier	All technologies using alternative fuels (e.g. ethanol, bio-gas, electricity) classified as Tier 4/5	Including Solar Home Systems and Pico PVs		
Bangladesh	●	● (S)	●		
Benin	●	●	●		
Bolivia	●				
Burundi	●	●			
Cambodia		● (S)			
Democratic Republic of the Congo	●	●			
Ethiopia	●	● (S)	●	●	
Kenya	● (P)	● (S)	●		
Laos	●	●			
Liberia	●		●		
Madagascar	●	●			
Malawi	●	● ^x	●		
Mali	●	● (S)	●	●	
Mozambique	●	●	●		
Nepal		●		●	●
Niger		● (S)	●		
Rwanda	●	●			●
Senegal	● (P)	●	●	●	●
Sierra Leone	●		●	●	
Tanzania	●	●			
Uganda	●	● (S)	●		











X = includes solar water heaters

Activities that are implemented as part of an associated project are designated by the symbols:

- (P) for *Promotion of climate-friendly cooking: Kenya and Senegal*, and
- (S) for *Strengthening the Entrepreneurial Ecosystem for Clean Cooking (SEE-CC)*.

The intervention countries of the *Regional Clean Cooking Action for West Africa (ReCCA)* are yet to be selected.

Table B-2 Overview of ongoing country projects

Country	Type of energy	Lead political partner	Project duration		Funding (in million EUR)	Planned outcomes (in million persons)
			start	end	Funds	
Bangladesh		Bangladesh Ministry of Power, Energy and Mineral Resources	06/09	12/25	29.153	4.234
Benin		Ministère de L'Énergie, de l'Eau et des Mines	10/09	12/26	31.094	1.637
Bolivia		Vice-Ministry of Electricity and Alternative Energy (VMEEA) of the Ministry of Energy	10/09	07/24	20.050	0.787
Burundi		Focus on local private sector	01/21	12/26	1.742	0.305
Cambodia		Ministry of Mines and Energy (MME)	03/15	12/25	6.850	0.075
Democratic Republic of the Congo		Ministère des Affaires Étrangères	12/19	12/26	2.978	0.179
Ethiopia		Ministry of Water and Energy (MoWE)	01/10	12/26	54.810	3.088
Kenya		Ministry of Energy and Petroleum (MoEP)	04/09	12/26	39.119	7.620
Laos		Ministry of Science and Technology (MoST)	03/15	12/25	3.810	0.291
Liberia (with Guinea until 12/2023)		Ministry of Mines and Energy	05/12	12/26	16.911	0.042












Country	Type of energy	Lead political partner	Project duration		Funding (in million EUR)	Planned outcomes (in million persons)
			start	end		
Madagascar		Ministère de l'Énergie et des Hydrocarbures	12/12	12/26	2.925	1.041
Malawi		Ministry of Energy	12/12	12/26	28.990	2.378
Mali		Direction Nationale de l'Énergie / Ministère des Mines, de l'Énergie et de l'Eau du Mali	04/09	12/26	20.600	0.219
Mozambique		Ministry of Mineral Resources and Energy	10/09	12/26	42.091	1.127
Nepal		Ministry of Energy, Water Resources and Irrigation	05/09	12/25	14.812	0.752
Niger		Ministère de l'Économie et des Finances	07/22	12/26	5.420	0.004
Rwanda		Ministry of Infrastructure (MININFRA)	10/09	12/26	34.824	0.351
Senegal		Ministry of Petroleum and Energy	04/09	12/26	33.337	3.002
Sierra Leone		Ministry of Energy	07/17	12/26	9.049	0.041
Tanzania		Ministry of Energy	12/12	12/26	16.581	2.605
Uganda		Ministry of Energy and Mineral Development (MEMD)	04/09	12/26	30.940	2.377
All ongoing and closed projects (incl. country-level managed extra activities)					528.219	

Table B-3 Management and thematic activities

Topic and/or country		Duration		Funding (in million EUR)
		start	end	
Global level	Management, monitoring, backstopping, learning, etc.	01/09	12/26	50.297
Global level	Globally managed country activities (SCCIF, SIINC, IKEA ²⁰ , DSS-management at headquarter-level, etc.)	08/18	12/26	13.100
Global level	Globally managed extra activities (refugees, preparation of RBFs, etc.)		12/26	4.004
Global level	Innovation impact RBF ²¹		12/26	8.500
Total				75.901

²⁰ Lead political partners for IKEA-funded activities in the countries are: Ethiopia: Ministry of Water and Energy (MoWE); Kenya: Ministry of Energy; Uganda: Ministry of Energy and Mineral Development (MEMD). The lead political partners for SCCIF and SIINC in Kenya and Uganda are the same ministries as listed for IKEA Foundation in Kenya and Uganda.

²¹ The Innovation impact RBF will be utilised in case a transfer of funds to the emerging new regional energy access project should not be possible for operational or other reasons.

C. Country project status

Ongoing projects

• Bangladesh	<i>page 42</i>
• Benin	<i>page 44</i>
• Burundi	<i>page 46</i>
• Cambodia	<i>page 48</i>
• Democratic Republic of the Congo	<i>page 50</i>
• Ethiopia	<i>page 52</i>
• Kenya	<i>page 54</i>
• Laos	<i>page 56</i>
• Liberia	<i>page 58</i>
• Madagascar	<i>page 61</i>
• Malawi	<i>page 63</i>
• Mali	<i>page 66</i>
• Mozambique	<i>page 68</i>
• Nepal	<i>page 70</i>
• Niger	<i>page 72</i>
• Rwanda	<i>page 75</i>
• Senegal	<i>page 77</i>
• Sierra Leone	<i>page 79</i>
• Tanzania	<i>page 81</i>
• Uganda	<i>page 83</i>

Phased out projects

• Bolivia	<i>page 87</i>
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Click on the country name to go directly to the respective country sheet.

Note that the country targets shown reflect the targets of the EnDev core programme, while the presented results may include results of co-financed projects within the respective country.

Bangladesh



Country facts

Population	171.5 million
Human Development Index	Rank 129 / Index 0.670
UN Classification	LDC
Access clean cooking	28%
Access electricity	99%

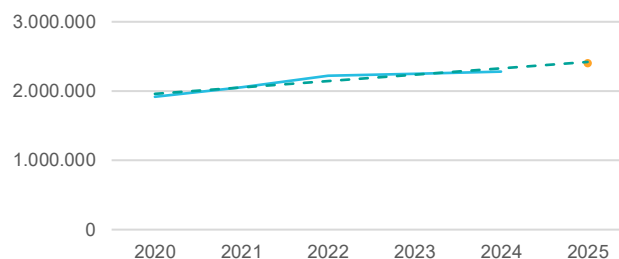
Project facts

Project period	06.2009 – 12.2025
Budget	EUR 29,153,000
Core funding incl. RBF	EUR 27,103,500
Earmarked	EUR 2,049,360
Average annual turnover of the last three years	EUR 586,731
Implementing Organisation	GIZ
Lead political partner	Ministry of Power, Energy and Mineral Resources (MPEMR)

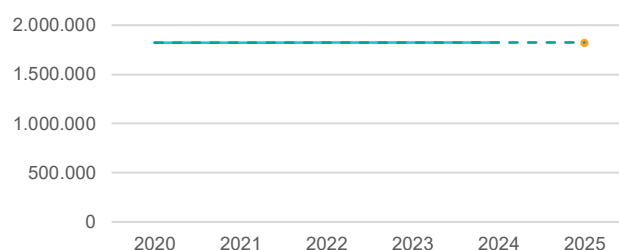
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	2,281,041	2,409,300
People: Electricity	1,823,858	1,824,700
Social institutions	970	970
MSME	25,505	22,818

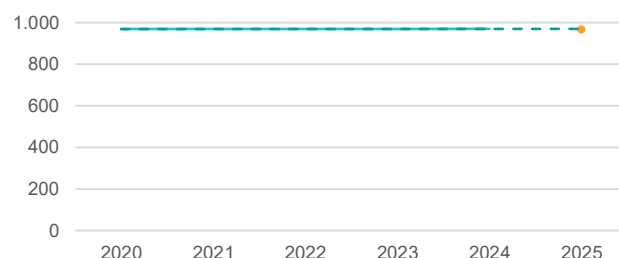
People with access to clean cooking



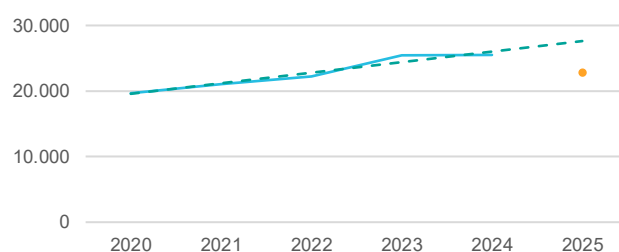
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

EnDev Bangladesh: Driving Clean Cooking and eMobility for a Sustainable Future



©AVA Development Society

Background information

EnDev Bangladesh is promoting cleaner and more efficient cooking alternatives, along with the productive use of solar energy. Current focus areas include developing the market for eCooking appliances, supporting the adoption of biomass-based improved cookstoves, and demonstrating the viability of solar-powered battery charging stations for e-rickshaws. EnDev aims to fulfil the 'Leave No One Behind' (LNOB) agenda by supporting improved cookstoves for tribal communities and training rural women to become technicians. This initiative not only fosters local employment opportunities but also ensures that marginalised groups have access to sustainable and clean energy solutions.

Progress made in 2024

EnDev, in collaboration with AVA Development Society and ASHRAI, is promoting the adoption of biomass-based improved cookstoves for tribal communities in Rajshahi division. Through this initiative, EnDev reached 3,000 people in 2024. In addition, 150 tribal women were trained in sales of improved cookstoves, maintenance, and repair, creating valuable livelihood opportunities. Many are already earning an income by selling and promoting improved cookstoves, receiving extra incentives for sales made under the initiative, thereby contributing to both economic empowerment and the adoption of cleaner cooking practices.

To support higher-tier cooking solutions, EnDev collaborates with Walton – one of the largest manufacturers and distributors of eCooking appliances in Bangladesh—to promote the adoption of eCooking solutions in Rajshahi and Rangpur divisions. The initiative focuses on peri-urban and rural areas, aiming to drive market development for eCooking appliances by stimulating demand and strengthening the supply chain in these regions. In 2024, the project reached 30,580 people with rice cookers and induction cookers, and introduced 55 new distributors to the intervention areas. EnDev has actively supported the Bangladesh Standards and Testing Institution (BSTI) and the Sustainable and Renewable Energy Development Authority (SREDA), to foster an enabling environment in the

eCooking sector. This collaboration has focused on establishing energy performance standards and testing protocols for eCooking appliances including rice cookers, induction stoves, and electric pressure cookers. EnDev provided technical support to BSTI, resulting in including of electric pressure cookers in the national energy performance standards.

To support the productive use of solar energy, EnDev pilots solar-powered battery charging stations for e-rickshaws. In collaboration with Northern Electricity Supply PLC (NESCO), EnDev assessed the technical and commercial viability of three charging stations in peri-urban and rural areas and selected one of these stations for a pilot. The project aims to compare grid-connected solar battery charging stations with traditional grid-based charging, evaluating their technical performance, practical feasibility, and financial viability.

Breaking Barriers—Shikha's Inspiring Journey to Self-Reliance

Shikha Biswas, from Ramkantapur village in Rajshahi Division, struggled to support her family on her school-teacher's salary. Despite holding a post-graduate degree in Bangla from Rajshahi College—one of the most prestigious educational institutions in Bangladesh—her earnings were not enough to meet the needs of her family. Determined to improve her financial situation, she participated in a training on the sales, maintenance, and repair of biomass-based improved cookstoves from AVA Development Society in October 2024. She now sells and installs improved cookstoves in her village and nearby areas, with an average of 80 units sold per month. She also teaches families on the proper usage and maintenance of them. With this additional income, Shikha was able to purchase two cattle and improve her family's quality of life.

Shikha has transformed her financial situation through hard work and determination, showing that it is possible to become self-reliant.

Benin



Country facts

Population	14.1 million
Human Development Index	Rank 185 / Index 0.504
UN Classification	LDC
Access clean cooking	6%
Access electricity	57%

Project facts

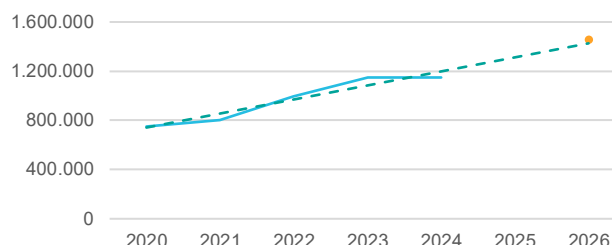
Project period	10.2009 – 12.2026
Budget	EUR 31,094,000
Core funding incl. RBF	EUR 26,094,00
Earmarked	EUR 5,000,000
Average annual turnover of the last three years	EUR 1,511,853
Implementing Organisation	GIZ
Lead political partner	Ministère de L'Énergie, de l'Eau et des Mines

Achievements in energy access

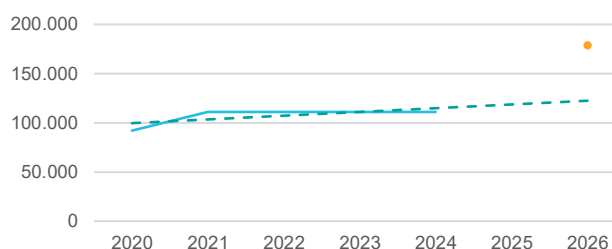
Target group	Reached*	Target
People: Clean cooking	1,148,786	1,457,200
People: Electricity	111,010	179,400
Social institutions	272	826
MSME	1,409	2,818

* Due to the ongoing transition of monitoring and evaluation responsibilities to institutional partners and the necessity for direct field verification, EnDev Benin did not complete the outcomes validation within the reporting timeframe. However, in 2024, results have been achieved, and they will be included in the 2025 reporting.

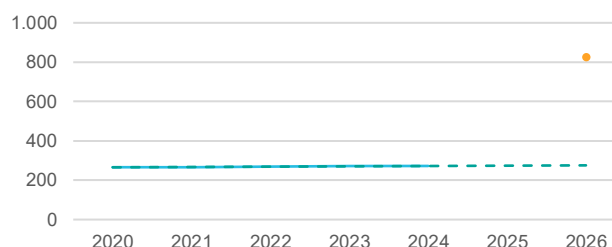
People with access to clean cooking



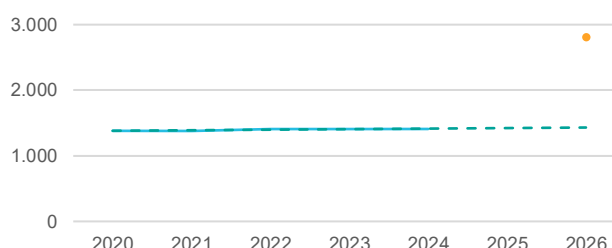
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



— People, Social institutions, MSMEs
 - - - - - Trend
 • Target

Advancing clean energy solutions in Benin



Background information

Since 2009, EnDev Benin has been actively supporting the improved cookstove market by providing technical assistance to producers and distributors. In 2021, the programme shifted its approach towards professionalisation and expansion of commercialisation networks to reach sustainability in the clean cooking market.

In 2014, EnDev Benin extended its activities to the solar energy sector, fostering market development through results-based financing and capacity-building initiatives for companies. These activities continue to play a pivotal role in the programme's operations. From 2021, EnDev put its focus in the solar sector on quality assurance and strengthening supply chains in rural areas, aiming to build consumer confidence in solar products and explore new market niches.

Supported with co-financing from the European Union for 2022–2025, EnDev Benin is expanding its efforts to promote household stoves and solar products. This includes innovations in clean cooking technologies and advancing the certification of solar companies.

Progress made in 2024

Key areas in the solar component have shown progress. The drafting of a national e-waste management plan and identification of pilot areas mark a significant step towards addressing the environmental challenges posed by waste of solar-PV products. The collaboration with the General Directorate for Planning and Rural Electrification (DGPER) has led to the validation of an authorisation and certification reference system, ensuring better governance and compliance in the renewable energy sector. Furthermore, new partnerships with the Chamber of Commerce and Industry of Benin (CCI-Benin) and the African group "Investisseurs & Partenaires" have started to provide closer and more durable support to solar companies, enhancing their capacity, and fostering business growth. Lastly, EnDev Benin established a strategy to promote and raise awareness about the productive advantages of solar equipment, paving the way for greater adoption and sustainable energy usage.

In the clean cooking sector, a collaboration agreement was

signed with the CCI-Benin to introduce a selection of its associated companies into the clean cooking market in Benin. The objective is to accelerate production of improved cookstoves and distribution capacities. EnDev conducted a pilot initiative with women restaurateurs in the modern canteen of the Port of Cotonou, introducing them to higher-tier cookstoves and eCookers. The initiative highlighted a demand for such stoves among restaurants in urban areas. Additionally, in collaboration with the World Food Programme, a study was conducted in 30 school canteens across Benin to evaluate the fuel consumption of two types of improved stoves and assess the environmental, socio-economic performance, and impact of the improved stoves installed.

Cleaner, cost-effective cooking for restaurateurs

Previously, the women running the modern canteen at the Autonomous Port of Cotonou relied on gas stoves, which incurred high financial costs. They had no alternative, as the port's director required them to use only smoke-free cooking appliances.

In 2024, EnDev introduced an innovative pilot project within their facilities. Through this initiative, the restaurateurs discovered eCookers and productive-use cookstoves powered by carbonised palm nut shells. Over a three-month trial period, closely monitored by the director and the restaurateurs, these new solutions proved to be entirely smoke-free and highly efficient.

As a result, all 36 restaurateurs adopted the improved cookstoves, purchasing them directly from the suppliers connected to them by EnDev. This initiative not only reduced their operating costs but also promoted cleaner, more sustainable cooking solutions.

Burundi



Country facts

Population	13.7 million
Human Development Index	Rank 187 / Index 0.420
UN Classification	LDC
Access clean cooking	0%
Access electricity	10%

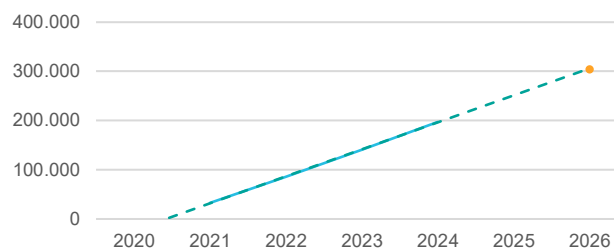
Project facts

Project period	01.2021 – 12.2026
Budget	EUR 1,742,000
Core funding incl. RBF	EUR 1,742,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 512,305
Implementing Organisation	AVSI
Lead political partner	Focus on local private sector

Achievements in energy access

Target group	Reached	Target
People: Clean cooking	197,131	305,000
People: Electricity	0	0
Social institutions	0	0
MSME	128	146

People with access to clean cooking



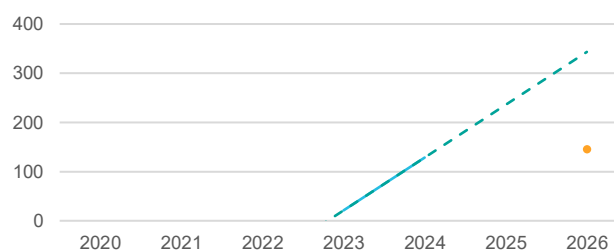
People with access to electricity

2020 2021 2022 2023 2024 2025 2026

Social institutions with access to clean cooking or electricity

2020 2021 2022 2023 2024 2025 2026

MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

Improved Cookstoves sale: a driver of social well-being for vulnerable communities



HIV-positive widow selling improved cookstoves. ©AVSI/Ntaraka Gustave 2024

Background information

In Burundi, EnDev provides technical support to local producers of the “Biikigiti” improved cookstove to develop their autonomy and ensure sustainable dissemination of the improved stoves in the country. The AVSI Foundation, which implements the EnDev activities since 2021, collaborates with local administration, non-governmental organisations and the private sector (cooperatives, small traders, etc.), and has also established partnerships with local media to strengthen awareness-raising campaigns on clean cooking through advertisements and radio broadcasts.

To increase the market and promote the employability of vulnerable groups, EnDev involves young unemployed people, mostly women, Batwa communities and Congolese refugees in the production and marketing of improved cookstoves. This strategy has been warmly welcomed by the target community and the local administration.

Progress made in 2024

Since 2021, EnDev has supported 62 producers through the provision of reliable tools and equipment. In 2024, EnDev focused on ensuring the availability of improved cookstoves, enhancing working conditions for producers and supporting vulnerable groups. The project has supported 20 new producers and upgraded 15 others through the provision of reliable tools and equipment in this year.



Vulnerable woman gets access to health insurance cards. © AVSI/Ntaraka Gustave 2024

This strategy has led to the creation of 400 jobs. In addition to technical training, support with tools and equipment and marketing, the project has focused on behaviour change and improving the social well-being of LNOB producers and vendors e.g. with support for savings, access to healthcare, and children's education.

50 vulnerable families of LNOB-producers received health insurance cards and birth certificates for their children (essential for access to health care). They were also supported to set up a savings and loan fund, which has made it easier for each woman to obtain school supplies for their children. Following this success, the project has integrated another category of vulnerable people, made up of widows suffering from AIDS.

From Struggle to Strength: Esperance's journey to independence through sales of improved cookstoves

Kubura Espérance, a 50-year-old woman from the Buterere area, had a difficult life from an early age. She was raped by a man from her village at the age of 17 and then forced by her family to marry him. During the pregnancy check-up for her third child, she discovered that she was HIV-positive. For her, it was the beginning of many social problems, linked to discrimination, in a society that considers AIDS a malediction. In fact, AIDS patients are criticised, abandoned and ignored by their families. Over the years, she became increasingly ill and lacked the physical strength to care for her family, subsequently she was left by her husband. Esperance was invited along with other vulnerable women living with AIDS to attend awareness-raising sessions and technical training on the sale of improved cookstoves. After training from EnDev on marketing and sales, Esperance quickly took a lead in the sales, selling 10 stoves (and earning USD 6) per day. Today, she is happy that she can support her family again:

“The sale of improved cookstoves enabled me to ensure the survival of my four children, because my capital is growing all the time. I feel useful in informing and breaking down the barriers that are still present in many people.”
Esperance Kabura, HIV-positive widow

Cambodia



Country facts

Population	1.7 million
Human Development Index	Rank 148 / Index 0.600
UN Classification	LDC
Access clean cooking	54%
Access electricity	92%

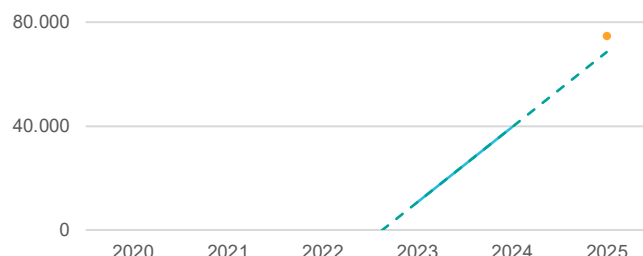
Project facts²²

Project period	03.2015 – 12.2025
Budget	EUR 6,726,000
Core funding incl. RBF	EUR 6,726,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 620,448
Implementing Organisation	SNV
Lead political partner	Ministry of Mines and Energy (MME)

Achievements in energy access

Target group	Reached	Target
People: Clean cooking	30,541	75, 000
People: Electricity	0	0
Social institutions	0	0
MSME	0	18

People with access to clean cooking



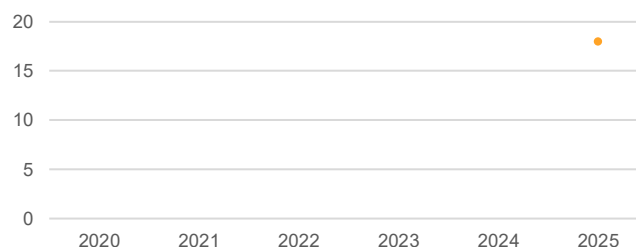
People with access to electricity

2020 2021 2022 2023 2024 2025

Social institutions with access to clean cooking or electricity

2020 2021 2022 2023 2024 2025

MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- Trend
- Target

²² Formerly, Cambodia, Laos, and Vietnam were part of a multi-country approach. Since 07/2023, each country is presented separately with a separate budget and individual indicative targets.

Experiencing Electric Cooking: Health Benefits and Time Savings in One



Background information

Since 2016, EnDev has been supporting the market for higher-tier cooking in Cambodia. A lack of awareness among households proved to be a significant barrier to change towards clean cooking. Inspired by 'Community Led Total Sanitation', Smoke Free Village redesigned behaviour change methods for clean cooking to drive the transition.

Smoke Free Village takes a systemic approach by building governance capacity from local to national levels and stimulating market development through demand activation.

Key partners are the Ministry of Mines and Energy and sub-national clean energy working groups, which oversee and coordinate activities at the village level.

Smoke Free Village is people-centred and responsive to data analysis. Data collected through logbooks, surveys, energy audits and cooking energy tests are analysed, linked and compared. This is used to monitor change and inclusion and to learn lessons.

Progress made in 2024

2024 was all about up-scaling and replication. The project scaled up from 243 to 457 villages (90,000 households) by July 2024, almost doubling its reach. To address the inherent capacity gap, experienced authorities provided peer training to authorities in new villages through exchange visits and workshops. This was not only very practical but also strengthened localisation and ownership at the subnational level.

In 2024, a total of 75,000 people participated in Smoke Free Village events, of whom 59,000 were women and 34,000 were households: registered at GESI as poor, living with disabilities or women-headed households.

Logbook data showed a sharp increase in clean cooking with electricity in 2024, with 12,000 new stoves purchased, compared to 4,500 in 2023. 10,342 ceramic woodstoves were removed from households. The prevalence of clean cookstoves among GESI households increased from 56% in 2023 to 67% in 2024.

Smoke Free Village has achieved a 28% reduction in daily firewood consumption, which is 68,000 kg per day less than 2023. Such a reduction in firewood has tangible environmental, gender and health benefits. By 2024, 10,000 households had switched to using only clean cooking fuels.

131 villages have been declared smoke-free, with at least 85% of households using primarily clean energy for cooking. An entire district with 20,000 households became smoke-free.

A National Clean Cooking Energy Strategy was finalised and accepted with high appreciation by the Ministry of Mines and Energy. Based on this document, the World Bank is preparing a substantial Clean Cooking Fund.

EnDev's implementer, SNV, signed an MoU with the health non-governmental organisation CHAI to work together to mainstream cooking energy in the health sector. Together with Berkeley Air and CHAI, health research projects have been developed and submitted to various donors. Evidence from this research will help convince the Ministry of Health to include cooking.

The Success of Smoke Free Villages is Spreading

The Smoke Free Village approach has attracted attention from other EnDev countries and beyond. At the EnDev Global Knowledge Exchange meeting in Uganda, several Asian and African countries expressed interest, and other organisations approached the Cambodian team to find out more. In 2024, the Smoke Free Village was replicated in Mozambique through the BRILHO project, resulting in a significant shift from open fires to improved cookstoves. Preparatory work has been done in Laos (EnDev), Bangladesh (WB), Nepal (Franke) and Kenya (USAID), and exploratory meetings have been held with RVO for initiatives in West Africa (EnDev). This shows that the principles of the Smoke Free Village are applicable in any context where awareness is a barrier to clean or improved cooking.

Democratic Republic of the Congo



Country facts

Population	105.8 million
Human Development Index	Rank 180 / Index 0.481
UN Classification	LDC
Access clean cooking	4%
Access electricity	21%

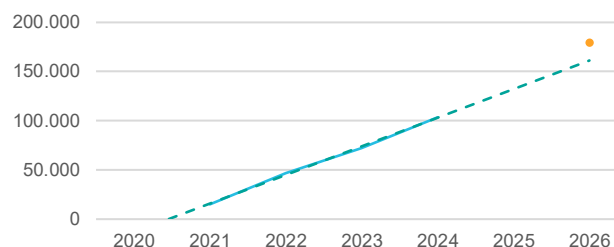
Project facts

Project period	12.2019 – 12.2026
Budget	EUR 2,978,000
Core funding incl. RBF	EUR 2,978,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 485,968
Implementing Organisation	AVSI
Lead political partner	Ministère des Affaires Étrangères

Achievements in energy access

Target group	Reached	Target
People: Clean cooking	103,521	179,400
People: Electricity	0	0
Social institutions	0	0
MSME	35	54

People with access to clean cooking



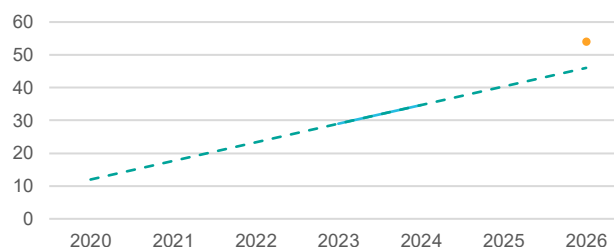
People with access to electricity

2020 2021 2022 2023 2024 2025 2026

Social institutions with access to clean cooking or electricity

2020 2021 2022 2023 2024 2025 2026

MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

Promoting improved cookstoves in fragile contexts



Internally displaced persons attending an awareness raising initiative, Goma.
© AVSI/Giovanni De Franceschi 2024

Background information

Since 2019, EnDev has been working in Eastern Democratic Republic of the Congo with a focus on Idjwi Island (Sud Kivu) and the cities of Bunia (Ituri), Goma (Nord-Kivu), Bukavu, Uvira (Sud-Kivu) and Kalemie (Tanganyika). This low-income region has one of the lowest electricity access rates in the world (1% in rural areas)²³ and is chronically affected by political crises and armed conflict. In 2024 alone, 3 million people fled their homes due to conflict in the east of the country, further increasing the share of internally displaced people in the intervention areas²⁴. EnDev's intervention areas are home to approx. 6.8 million people in need²⁵. Families spend around USD 30 per month on firewood and charcoal, a significant share of which is produced by armed groups hidden in Virunga National Park.

EnDev promotes sustainable development and access to energy through the promotion of clean cooking (including urban eCooking) and the promotion of productive use of energy on the mini-grids on Idjwi Island.

Progress made in 2024

In 2024, increased insecurity in North and South Kivu led to increasing internally displaced populations around urban areas. In this context, three new improved cookstove producers were established in Goma and Bukavu to meet increasing demand from poor and displaced persons in these areas. All three producers received technical training in the construction of improved cookstoves. Two also benefited from business management and marketing training and support for scaling production. The project also supported 42 new improved cookstoves vendors. All vendors received marketing kits and training in sales techniques to enhance their business income and promotional efficacy.

50 households participating in an eCooking pilot and were divided into four groups. The first group will receive electric pressure cookers, the second single induction hobs, the third double induction hobs, and the fourth a combination of

single induction hobs and electric pressure cookers. The test will assess the affordability, usage, and usefulness of the devices for households; whether they can effectively replace traditional cooking methods, and whether the electricity system can support their use during peak usage. Under the EnDev Innovation Fund, larger pilots of eCooking devices in Goma were also prepared in partnership with the local metrogrid providers.

Regarding the productive use of energy, 11 local small businesses received support for buying appliances, and were trained on the use of their electric appliances and on business management. An agreement with a local microfinance institution to provide micro-loans to businesses was also closed. This will allow more entrepreneurs to afford appliances in the future, as the ability to pay is a significant hurdle for most businesses on Idjwi. Procurement delays slowed the component, but activity should pick up in 2025.

Collaborating to bring Improved Cook Stoves to displaced families in Bosco Lac

In December 2024, EnDev partnered with the Italian organisation "Costruisci un Sorriso" and the Salesian community of Bosco Lac to support internally displaced families in the region. Most of these families fled their homes due to ongoing conflict between M23 rebel forces and the Congolese army. The initiative focused on organising an awareness-raising activity for over 200 displaced women living near Bosco Lac. The event introduced **improved cookstoves** as a practical solution for daily cooking needs. During the session, participants learned about the benefits of improved cookstoves, including reduced charcoal consumption, improved air quality, and cost savings. As a result, approximately 200 improved cookstoves were purchased by the participants. The collaboration demonstrated how targeted interventions can address both environmental challenges and the immediate needs of vulnerable populations.

²³ [World Bank \(2021\)](#)

²⁴ [World Food Programme Flash Report: Crisis in Eastern DRC, January 2025](#)

²⁵ [DRC HNO 2024](#)

Ethiopia



Country facts

Population	128.7 million
Human Development Index	Rank 176 / Index 0.492
UN Classification	LDC
Access clean cooking	9%
Access electricity	55%

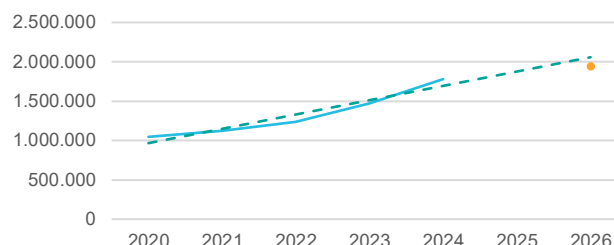
Project facts

Project period	01.2010 – 12.2026
Budget	EUR 54,810,000
Core funding incl. RBF	EUR 36,587,500
Earmarked	EUR 18,221,901
Average annual turnover of the last three years	EUR 5,037,928
Implementing Organisation	GIZ, SNV
Lead political partner	Ministry of Water and Energy (MoWE)

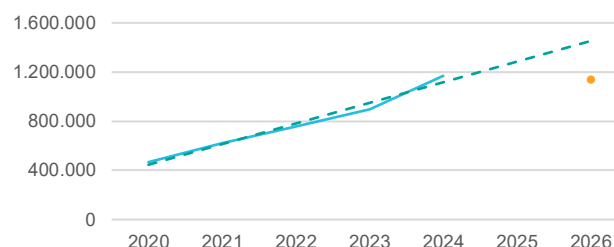
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	1,779,713	1,944,000
People: Electricity	1,168,597	1,144,000
Social institutions	4,126	7,899
MSME	10,061	18,338

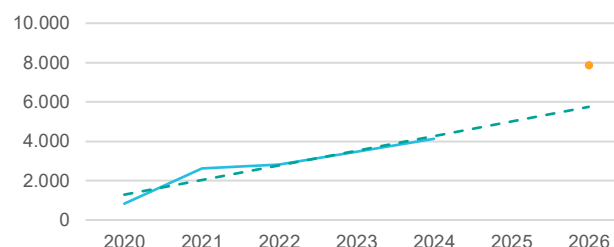
People with access to clean cooking



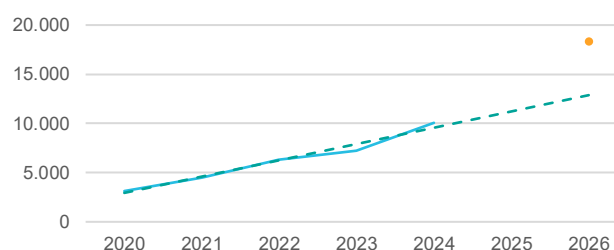
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

Transforming rural health services in Ethiopia



Background information

Ethiopia has vast renewable energy potential, yet only 55% of the population has electricity access, limiting economic growth and social development. Rural communities also lack clean cooking technologies—over 90% rely on unsustainable charcoal or firewood, leading to deforestation, soil erosion, and indoor air pollution.

EnDev is a well-established programme in Ethiopia, having received co-funding from Ireland, the Korean Foundation for International Healthcare, RVO, and the European Union.

EnDev Ethiopia's interventions cover four key areas:

- energy-efficient and improved cookstoves,
- higher-tier cookstoves (including eCooking),
- stand-alone solar home systems, and
- community-led off-grid electricity through photovoltaic mini-grids and nano-grids.

The programme provides technical and business support to clean cookstove manufacturers and solar retailers while fostering market growth for productive use of energy. Additionally, EnDev collaborates with government utilities to accelerate rural electrification and facilitates solar system installations in social institutions like schools and health centres, broadening access to sustainable energy.

Progress made in 2024

In partnership with the Ministry of Health (MoH) and the Ministry of Water and Energy (MoWE), EnDev Ethiopia has electrified off-grid rural health institutions in the regions of Amhara, Oromia, Afar, and Benishangul. Through the associated project *Energising Health* and the electrification of social institutions under its core-activities, EnDev Ethiopia has installed solar direct-drive vaccine fridges and photovoltaic systems, improving healthcare services and expanding electricity access. Moreover, EnDev provided various incentives and capacity-building for the private sector to further promote the market for decentralised renewable energy technologies.

The programme has prioritised vulnerable communities, ensuring access to modern energy—from small solar-powered systems to mini-grids. EnDev Ethiopia has commissioned

three community-led mini-grids in off-grid areas of Oromia, delivering reliable electricity to households, social institutions, and businesses, fostering economic growth by enabling local enterprises to thrive.

EnDev Ethiopia's clean cooking component has focused on strategic partnerships to reach marginalised groups, including LNOB communities, women and girls, refugees, internally displaced populations, and beneficiaries of the government's social protection programme (Productive Safety Net Programme, PSNP). Market development in Afar and Somali has strengthened clean cooking supply chains using gender-transformative approaches. Additionally, scaling efforts for institutional stoves have introduced clean, efficient cooking technologies in school feeding centres in refugee camps in Gambela. EnDev Ethiopia has also advanced higher-tier cooking solutions, particularly eCooking, by advocating for its inclusion in national roadmaps.

How an Energised Health Centre Transformed Sayta Feleke's Life

Sayta Feleke lives in Loka Abaya, a district (*woreda*) in South Region of Ethiopia. Like many others Sayta faced challenges accessing proper healthcare as her local health centre lacked energy access. She often had to travel over 10 kilometres for medical tests, because her local health centre relied only on symptom-based treatment. This was changed when EnDev Ethiopia installed a solar PV system at Argada Haro Dinto Health Centre, enabling a fully operational laboratory and round-the-clock services with consistent electricity. Now, Sayta and others receive timely and accurate diagnoses. "We now receive the treatment we need. Today, I came in, feeling the symptoms of malaria, and thanks to the new laboratory, they were able to test me and provide the right medication. I am grateful to the health centre and to EnDev as well for bringing this solar system to us."

Kenya



Country facts

Population	55.3 million
Human Development Index	Rank 146 / Index 0.601
UN Classification	Developing Economy
Access clean cooking	30%
Access electricity	76%

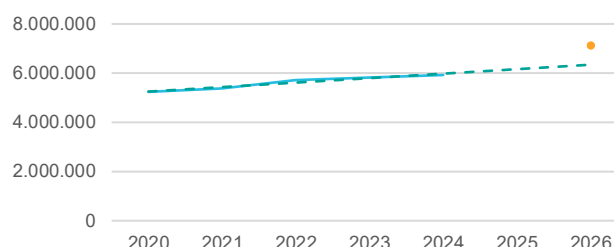
Project facts

Project period	04.2009 – 12.2026
Budget	EUR 39,119,000
Core funding incl. RBF	EUR 32,574,000
Earmarked	EUR 6,545,000
Average annual turnover of the last three years	EUR 2,932,605
Implementing Organisation	GIZ, SNV, CLASP
Lead political partner	Ministry of Energy and Petroleum (MoEP)

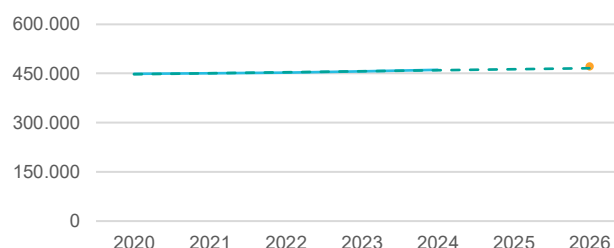
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	5,923,881	7,147,600
People: Electricity	461,243	472,500
Social institutions	1,921	1,320
MSME	12,751	13,030

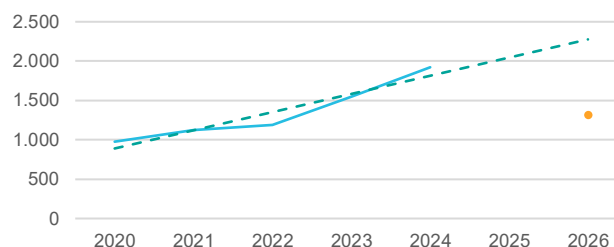
People with access to clean cooking



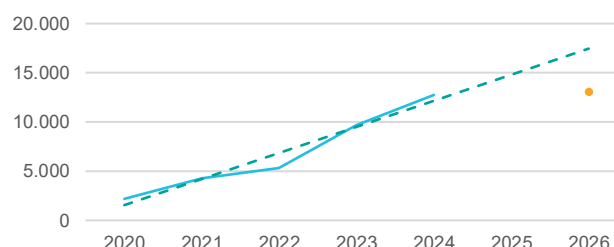
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

Advancing cooking solutions and the productive use of solar energy



Background information

Since 2009 EnDev has been promoting access to sustainable energy for households, social institutions and MSMEs in Kenya. About 75% of the Kenyan population has access to electricity, while about 31% has access to improved cooking solutions. EnDev supports Kenya's goals of achieving universal access to electricity by 2030 and clean cooking by 2028 by focusing on rural areas and displacement settings and providing various initiatives to strengthen the demand side, the supply side and the enabling environment.

EnDev Kenya is also implementing a USAID-funded Smart Community Coalition Innovation Fund project on solar electric bicycles in a humanitarian context, and the IKEA Foundation-funded Sustainable Energy for Smallholder Farmers (SEFFA) project, which promotes productive use of energy solutions in rural value chains.

Under the broader partnership umbrella, EnDev implements two associated projects, the African Biogas Component (ABC) Kenya, funded by DGIS and DANIDA, and the Green Climate Fund (GCF) co-financed project "Climate-friendly Cooking in Kenya and Senegal".

Progress made in 2024

In 2024, EnDev strengthened its commitment to enhancing the productive use of energy, driving economic growth and boosting agricultural productivity among MSMEs. It also expanded its focus beyond improved cookstoves to include higher-tier cooking solutions, such as electric and bioethanol stoves.

One of the critical barriers to eCooking in Kenya is the high cost of electricity. EnDev therefore worked with the Kenyan utility (KPLC) to introduce a tariff experiment, combined with a pilot study, to generate data and insights to inform the design of utility tariffs that make electric cooking affordable. In addition, EnDev facilitated the eCooking Roundtable, established by the Ministry of Energy in 2024 and comprising Global eCooking Coalition (GeCCo) anchor partners and technology distributors, to coordinate actions to implement the National eCooking Strategy. EnDev Kenya continued to

implement two result-based financing (RBF) activities, one for the promotion of eCooking in households and MSMEs, and the second for the promotion of solar energy for income generation and in social institutions, working with 12 private sector actors.

To strengthen capacity for operation, maintenance and after-sales service to end users, EnDev, in collaboration with the Toolkit Skills and Innovation Hub and the Ramogi Institute for Advance Technology, facilitated technical training and capacity building for last mile entrepreneurs and informal enterprises on solar system sizing, installation, troubleshooting, repair and maintenance of solar and electric cooking appliances.

EnDev also supported access to finance actors to raise end-user awareness and pilot innovative financing models such as "Save Now, Buy Later". This model leverages on digital savings platform and facilitates linkages between end-users, technology manufacturers and distributors.

Under LNOB, SNV promoted improved cookstoves and solar technologies to households and MSMEs in refugee and host communities in Turkana County through the Market-Based Energy Access intervention, in partnership with eight distributors and a financial institution, the Kenya Bankers Association. Activities included supporting market development, piloting innovations and improving the enabling environment.

Enhancing Skills and Capacity of Youth and Women

High-performing youth and women promoting solar and eCooking appliances in rural areas were selected to receive a 5-day training to enhance their skills and capacity to provide end-users with advice on the operation of the adopted technologies, as well as skills for troubleshooting and repair.

This was done in partnership with the technology distributors and delivered by experts from two technical and vocational training institutions, the Toolkit Skills & Innovation Hub and Ramogi Institute for Advance Technology. A total of 35 youth people (43% women) participated.

Laos



Country facts

Population	7.7 million
Human Development Index	Rank 139 / Index 0.620
UN Classification	LDC
Access clean cooking	10%
Access electricity	100%

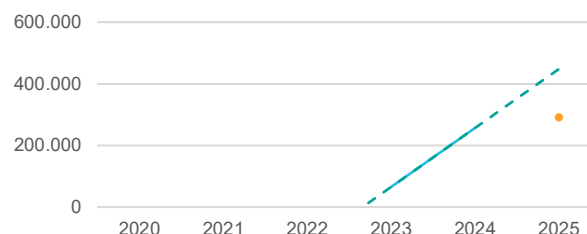
Project facts²⁶

Project period	03.2015 – 12.2025
Budget	EUR 3,933,000
Core funding incl. RBF	EUR 3,933,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 384,710
Implementing Organisation	SNV
Lead political partner	Ministry of Science and Technology (MoST)

Achievements in energy access

Target group	Reached	Target
People: Clean cooking	255,606	290,900
People: Electricity	0	0
Social institutions	211	140
MSME	644	846

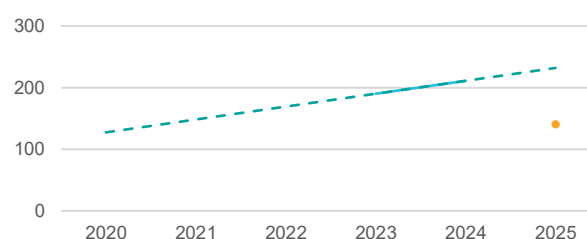
People with access to clean cooking



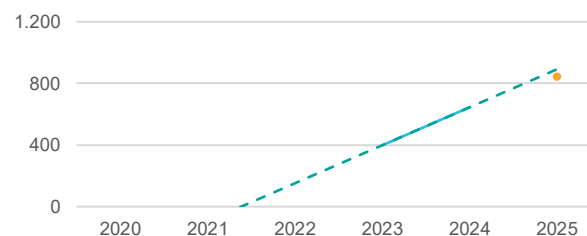
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- Trend
- Target

²⁶ Formerly, Cambodia, Laos, and Vietnam were part of a multi-country approach. Since 07/2023, each country is presented separately with a separate budget and individual indicative targets.

Inclusive cooking for healthier kitchens



Background information

EnDev Laos, implemented by SNV since 2016, promotes the inclusive and sustainable adoption of clean cooking solutions. The current programme focuses on developing the market for improved biomass cookstoves and electric cookstoves (eCookstoves) while prioritising support for the poorest and most vulnerable populations to ensure that no one is left behind. The initiative is being implemented in close collaboration with the Ministry of Energy and Mines.

Progress made in 2024

In 2024, EnDev Laos made significant progress in strengthening the improved cookstoves market by addressing all three key market segments: demand, supply, and the enabling environment. The project facilitated the establishment of two production units of improved cookstoves, six distributors, 110 retailers, and one testing unit, bringing the total network to 35 production units, 17 distributors, 2,810 retailers, and six stove testing units across the country. Through this expanded network, 185,000 improved cookstoves were disseminated in 2024, including 4,000 units specifically reaching the poorest and most vulnerable households, a group typically excluded from the market-based approach.

A key strategic focus for EnDev Laos has been the promotion of eCooking to support healthier kitchens and future generations. Inspired by EnDev Cambodia, the project introduced the Smoke-Free Village approach to encourage a shift to clean cooking by raising awareness of the negative impacts of traditional cooking practices. However, several barriers to adoption were identified, including perceptions that Lao cuisine is incompatible with electric cooking, concerns over the taste of food, the high upfront cost of eCooking appliances, the belief that cooking with electricity is a luxury, and limited access to devices and after-sales services. Despite these challenges, EnDev Laos successfully signed a Memorandum of Understanding with 22 village committees in 2024 and launched Smoke-Free Village activities, resulting in the dissemination of 1,700 eCookstoves within the year.

To support institutional cooking needs, particularly for school meal programmes, EnDev Laos piloted a prototype of a larger institutional cookstove in one school, drawing on expertise from Uganda. Hands-on training sessions were conducted for local artisans to enhance their technical skills and enable future scale-up. This prototype is now being used to showcase the technology to stakeholders involved in school meal programmes, with awareness further strengthened through student-led campaigns.

EnDev Laos works in close collaboration with the Ministry of Energy and Mines (MEM) and has facilitated its role as the anchor partner of the Global Electric Cooking Coalition (GeCCo), a global network of eCooking advocates dedicated to supporting national transitions to electric cooking at scale. In addition, EnDev Laos has led the preparation of the country readiness assessment report, which will serve as a roadmap for scaling up eCooking across Laos.

Putting Health First: A New Path to Clean Cooking in Laos

Convincing communities to switch from traditional biomass cooking to clean cooking remains a significant challenge. In Laos, where firewood from community forests is readily available, arguments based on cost and time savings are often unconvincing. Instead, EnDev Laos has shifted the focus to health, using the message: “You can’t have healthy children and a smoky kitchen together.” Ms. Manivone, the Village Head of Donemo Village in Luang Prabang Province, has been at the forefront of this advocacy, highlighting the need to prioritise family well-being over tradition. This approach has already begun to influence behaviour, with a noticeable increase in eCooking adoption in the community.

Liberia



Country facts

Population	5.5 million
Human Development Index	Rank 177 / Index 0.487
UN Classification	LDC
Access clean cooking	1%
Access electricity	32%

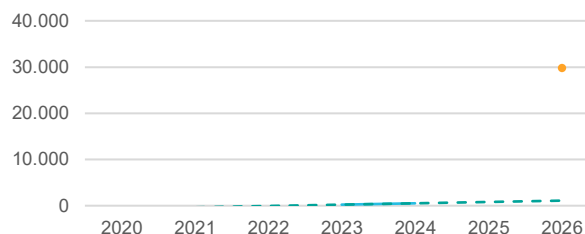
Project facts²⁷

Project period	05.2012 – 12.2026
Budget	EUR 16,911,000
Core funding incl. RBF	EUR 13,095,000
Earmarked	EUR 3,816,000
Average annual turnover of the last three years	EUR 1,624,661
Implementing Organisation	GIZ
Lead political partner	Ministry of Mines and Energy

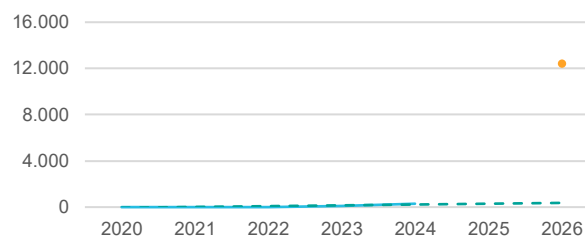
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	520	29,800
People: Electricity	292	12,500
Social institutions	57	98
MSME	0	5

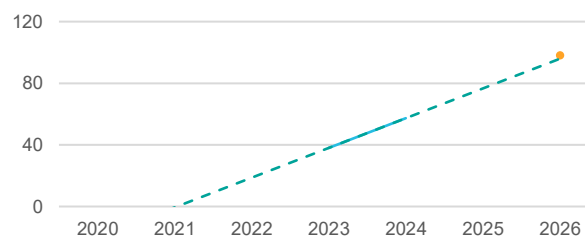
People with access to clean cooking



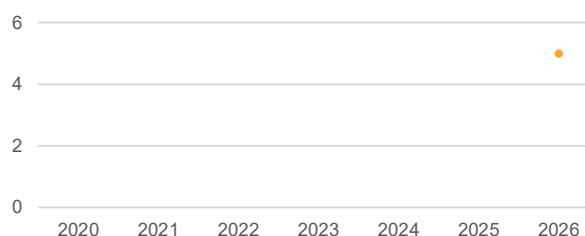
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- Trend
- Target

²⁷ Previously, Sierra Leone, Liberia, and Guinea were part of a multi-country approach. As of 07/23, Sierra Leone and Liberia are presented separately with a separate budget and individual indicative targets, whereas Guinea ended in 12/2023.

A marathon paves the way for cleaner cooking energy



Background information

Energy access in Liberia faces a stark urban-rural divide. While around 50% of Monrovia's households enjoy the benefits of electricity, rural electricity access stands at 8%. In terms of thermal energy use, charcoal consumption in urban areas is strongly affecting the countryside, where it contributes significantly to the deforestation of the country's primary forests. Overall, however, access to cleaner cooking energy is still negligible across the nation.

EnDev actively supports the government's goal of reaching a 75% electrification rate by 2030 (see Demand-Side Subsidies Component, next page), while implementing steps to expand access to improved cookstoves and ensuring no one is left behind (LNOB).

Progress made in 2024

In 2024, EnDev Liberia completed the rollout of the BMZ-funded "Energising Health" initiative, electrifying 297 health facilities with solar lighting systems and solar direct-drive vaccine fridges. The initiative lights up health facilities – often maternal wards – in off-grid areas and ensures that last-mile patients receive access to lifesaving vaccines.

EnDev's activities in support of Liberia's cleaner cooking energy sector focused on two major interventions: expanding access to improved cookstoves for both schools and households.

Regarding institutional cooking, EnDev's efforts to build capacities with local cookstove producers cumulated in the successful organisation of a 'stove camp' – an in-depth technical workshop on stove design and combustion principles. This resulted in the development of two successful prototypes for institutional cooking. Subsequently, EnDev worked with the manufacturers to make their stoves ready for series production. The first two improved institutional cookstoves were delivered to Careysburg Elementary School in December as part of a collaboration with the World Food Programme to provide more than 100 schools

in Liberia with access to cleaner firewood-based stoves over the coming year. The supported schools are located in impoverished communities receiving food assistance from World Food Programme. These efforts ensure that energy solutions reach underserved communities, aligning with the commitment to leave no one behind (LNOB).

With a view to household cooking, EnDev worked with existing artisanal and semi-industrial producers to increase technical capacities and improve the production of household cookstoves throughout the year. Among other measures, EnDev provided companies with tools to improve their workshops as well as facilitated awareness raising for cleaner cooking (see highlight).

EnDev Liberia's efforts regarding access to electricity are focused on the Demand-Side Subsidy (DSS) intervention, see next page.

Sports for Development – Awareness Raising at the Liberia Marathon 2024

With over 2,000 participants, including 30% female runners, the Liberia Marathon is the largest sporting event in Mano-River-Union and a highlight in Monrovia's sporting calendar. In collaboration with the organizing committee, EnDev made the 2024 edition of the marathon a milestone for cleaner cooking energy in Liberia. Social media posts, product flyers in starter packs, and exhibition booths for local cookstove manufacturers at the finish line ensured that thousands of Liberians were made aware of the benefits of cleaner cooking. The highlights: a prize raffle, which attracted long queues and awarded 200 lucky winners with improved cookstoves, and awards for the best Liberian runners ("Liberian Patriot Award"). The best runners of all categories, including all female and male athletes with disabilities, also received improved stoves as an award (see picture).

Demand-Side Subsidies Component

Project Facts

Project Period	08.2022 – 09.2025
Estimated Country Budget	EUR 3,816,000
Political Partner(s)	Ministry of Mines and Energy (MME), Rural and Renewable Energy Agency (RREA)

Progress of the DSS component in 2024

With the Demand-Side Subsidy (DSS) pilot in Liberia, EnDev aims to facilitate access to quality-certified Tier 1 solar home systems for low-income, vulnerable communities who are not currently reached by commercial markets. The DSS pilot is implemented in partnership with the World Bank's Liberia Electricity Sector Strengthening and Access Project (LESSAP) and the Rural and Renewable Energy Agency (RREA).

In 2024, EnDev made significant progress in implementing the DSS pilot in Liberia. BRAC Liberia, as the project's fund manager and implementing partner, contracted the first company in early March. However, stock availability has been the foremost challenge, along with the provision of advance payments to overcome working capital constraints and enable product orders. With advance payments in place, the first product shipments landed in the third quarter, enabling sales to pick up at the end of the year. Verification is underway and will be a focus of EnDev's work in 2025.

Given the nascency of the solar market in Liberia, EnDev together with BRAC Liberia provided participating companies with capacity building such as training on sales and marketing as well as workshops on financial and business acumen. EnDev also contracted a local bank to facilitate access to finance and provide intensive business-development support in the form of an accelerator programme, which is expected to commence in January 2025.

Furthermore, based on feedback from companies as well as insights from a household affordability study, EnDev amended its DSS design by increasing subsidy levels from 20% to 40% (up to 80 USD max. cap) and expanding the scope from two to seven target counties. The revision aims to improve access to electricity for vulnerable households while ensuring sustainable market expansion.

Alignment and collaboration with the World Bank

In Liberia, the DSS pilot is implemented within the Liberia Solar Home System Result Based Financing (LSHS-RBF) programme. The LSHS-RBF is a joint RBF initiative between EnDev and the World Bank funded LESSAP project, implemented by Liberia's Rural and Renewable Energy Agency (RREA). Under this joint pilot, EnDev provides demand-side subsidies through the DSS component, while the RREA with funding from LESSAP provides supply-side subsidies for each verified sale.

Through this collaborative approach, the project partners ensure simplicity for participating companies by offering a "one-stop-shop" for contracting and claims, and leverage synergies through joint implementation.

KPI	Achieved	Target
# of people reached with solar products	170	33,100

DSS lessons learnt

Liberia's off-grid solar sector is still in its infancy, and companies' capacities to implement large-scale RBF interventions are limited. Intensive capacity building and one-on-one business coaching throughout the project's duration are necessary to successfully expand market reach to the target regions.

Cash constraints and inventory availability have been major challenges to the DSS program in Liberia. While the World Bank supply side subsidy offers down payments for the purchase of inventory, these amounts proved insufficient for companies to order from overseas suppliers. EnDev therefore supported companies to partner with international suppliers, which facilitated the establishment of bonded warehouses in the country. The warehouses allow suppliers to have consistent stock and reduce risks relating to international orders, while allowing companies to purchase inventory for sales under the pilot.

Experience from implementation has also revealed the need for greater awareness raising efforts beyond the marketing from participating companies, particularly regarding the subsidy amount and duration, eligibility requirements, technologies, and consumer rights. EnDev has therefore begun planning a dedicated awareness campaign, with an emphasis on in-depth conversations with communities and strategies that ensure women and vulnerable groups are reached.

Madagascar



Country facts

Population	31.2 million
Human Development Index	Rank 177 / Index 0.487
UN Classification	LDC
Access clean cooking	2%
Access electricity	36%

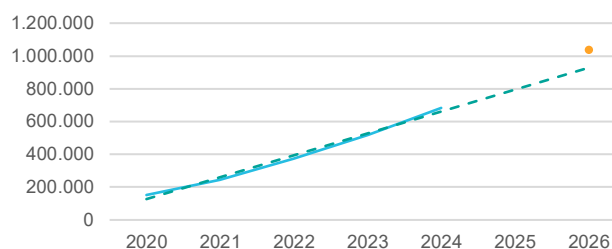
Project facts

Project period	12.2012 – 12.2026
Budget	EUR 2,925,000
Core funding incl. RBF	EUR 2,925,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 230,683
Implementing Organisation	ADES
Lead political partner	Ministère de l'Énergie et des Hydrocarbures

Achievements in energy access

Target group	Reached	Target
People: Clean cooking	682,993	1,041,100
People: Electricity	0	0
Social institutions	628	474
MSME	4,986	2,211

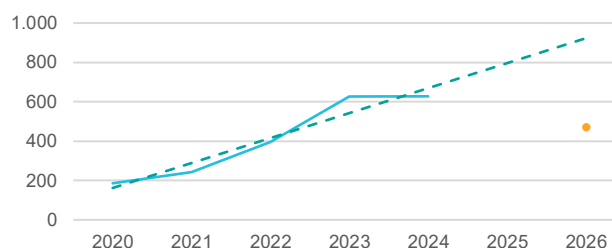
People with access to clean cooking



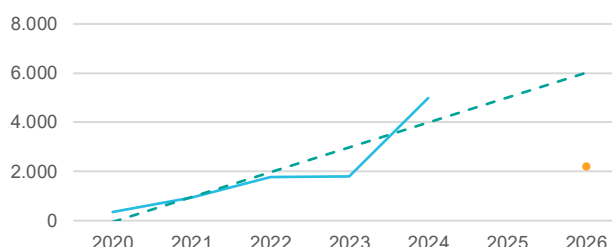
People with access to electricity

2020 2021 2022 2023 2024 2025 2026

Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



— People, Social institutions, MSMEs
 Trend
 • Target

Expanding impact in vulnerable communities



© ADES

Background information

Madagascar faces severe environmental and socio-economic challenges. Over 90% of the forests in Madagascar have been lost, endangering both its unique biodiversity and the livelihood of people. At the same time, poverty remains widespread, with 75% of the population living in “moderate” poverty and 52% in extreme poverty²⁸. In the most affected regions, more than one 12% of children are affected by malnutrition²⁹.

EnDev collaborates with the Swiss-Malagasy non-governmental organisation ADES, which has been active in Madagascar for 24 years, promoting energy-efficient cooking solutions, reforestation, and education. ADES manufactures solar cookers and improved cookstoves, reducing fuel consumption by 50-70% and easing pressure on forest resources. With its own production facilities and fifteen distribution centres, ADES ensures wide-reaching impact across Madagascar, integrating sustainability and community engagement into its mission.

Progress made in 2024

In 2024, ADES operated with great success under EnDev in Madagascar, achieving multiple milestones in all areas of activity. ADES has increased the partners in reforestation and the number of trees planted, and families supported. Both production and sales reached a new all-time high. This is also evident in the expansion of ADES’ distribution network, with the number of permanent employees increasing from 287 to 300. Additionally, 280 resellers generated an income at the end of 2024. A preliminary analysis revealed that the income from the sales accounted for more than 50% of their total earnings, highlighting the economic impact of the initiative. The educational programs renewed the government cooperation for “Green Schools” and increased the impact ADES has on students and teachers.

By the end of 2024, ADES had strengthened its internal capacities and operative standards, leading to the increased production and of high-quality improved cookstoves for households and small enterprises.



“We can attest to the effectiveness of ADES’ improved stoves in preserving the environment: they reduce the amount of charcoal used for cooking.”

Mme Henintsoa, Directrice du Centre Mahadera, Antsirabe

Ensuring EnDev’s activities reached vulnerable groups remained a challenge due to the lack of reliable data. ADES identified regional remoteness and low average income as key poverty indicators. As a result, targeted efforts were intensified in these areas, ensuring a significant portion of cookstove sales benefited the most disadvantaged regions. Beyond household sales, ADES also supplies improved cookstoves to micro-, small-, and medium-sized enterprises, particularly street kitchens known as “gargottes.”

²⁸ [Madagascar Poverty Assessment, World Bank 2024](#)

²⁹ [UNHCR Humanitarian Snapshot 2024](#)

Malawi



Country facts

Population	21.1 million
Human Development Index	Rank 172 / Index 0.508
UN Classification	LDC/LLDC
Access clean cooking	1%
Access electricity	14%

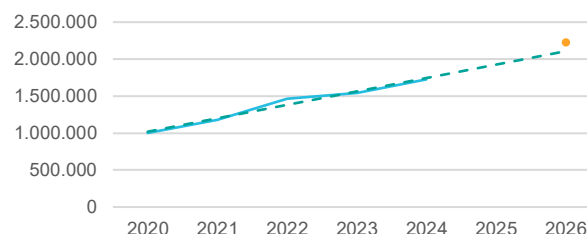
Project facts

Project period	12.2012 – 12.2026
Budget	EUR 28,822,000
Core funding incl. RBF	EUR 14,481,000
Earmarked	EUR 14,341,000
Average annual turnover of the last three years	EUR 3,782,540
Implementing Organisation	GIZ, Maeve, Self Help Africa
Lead political partner	Ministry of Energy

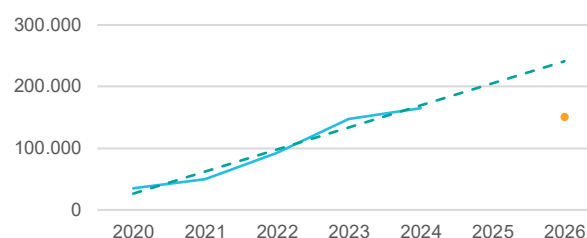
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	1,725,312	2,226,200
People: Electricity	164,965	151,900
Social institutions	183	37
MSME	527	436

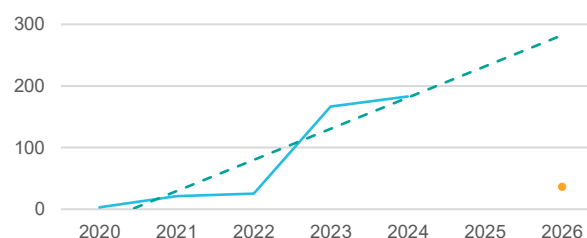
People with access to clean cooking



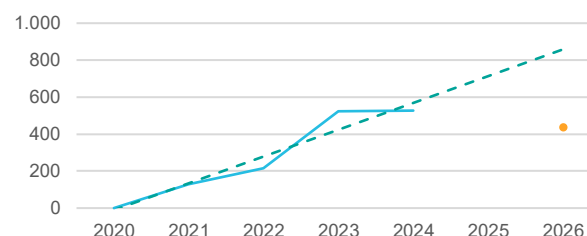
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



— People, Social institutions, MSMEs
 Trend
 • Target

Providing clean cooking solutions in displaced communities



Background information

Malawi has one of the lowest electrification rates, with over 74% of the population living without electricity, and the majority of the country relying on firewood and charcoal for cooking. In 2024, EnDev Malawi continued to expand energy access in alignment with the Malawi Government's National Energy Compact, eCooking Roadmap, and upcoming Clean Cooking Strategy and productive use of energy roadmap. However, progress was hindered by FOREX challenges, climate-related accessibility challenges, an ongoing economic crisis, and difficult business environment, particularly affecting MSMEs.

Progress made in 2024

EnDev remained committed to strengthening the improved cookstove sector. Business development support, including *Gender makes Business Sense* training, was introduced for stove producers. In LNOB target areas, EnDev provided commissions to last-mile improved cookstove agents, trained community-based organisations as improved cookstove promoters, and supported installations of improved cookstoves at the Karonga Refugee Transit Center.

To boost private sector capacity, EnDev provided tailored business development support to 25 renewable energy companies focused on solar electrification and clean cooking. This initiative aims to increase access to sustainable energy solutions by strengthening companies' business models, investment readiness, and financial capacity. Five out of the 25 companies also benefit from additional support from EnDev's Energy Enterprise Coach initiative.

Furthermore, EnDev contributed to strengthening the enabling environment by supporting the Renewable Energy Industries Association of Malawi (REIAMA) in developing its 2024-2028 Strategic Plan. EnDev also supported REIAMA to establish its Productive Use of Energy technical working group and host the 2024 National Energy Conference. EnDev also remains committed to its role as technical lead of the National Cookstove Steering Committee's firewood and the newly introduced electric cooking working groups.

To ensure inclusive access, EnDev integrated a *leave-no-one-behind (LNOB)* component, providing clean cooking solutions to recipients of unconditional social cash transfers, targeting ultra-poor and labour-constrained households across five districts. In 2024, EnDev Malawi announced its first Higher-Tier Cooking (HTC) results-based financing initiative, generating strong interest from companies to supply pellet stoves and induction cookers for the urban population nationwide.

Additionally, EnDev continued implementation of several co-financed initiatives including the *Demand-side Subsidies (DSS) Component* (DGIS), *AgEnergy* (GEAPP), *Putting Energy to Work* (EU), and *EnergICE* (Embassy of Iceland). Meanwhile, the *Energising Health* intervention officially concluded after enhancing energy access in 237 health posts and health centres in 12 districts across the country. The equipment was officially handed over to the Government of Malawi.

LNOB: Improved cookstoves at Karonga Refugee Transit Center

With its implementing partner Maeve, EnDev supported the installation of improved cookstoves at the Refugee Transit Center in Karonga District. In two cooking shelters managed by Welthungerhilfe, a total of **20** fixed improved cookstoves – Chitetezo Mbula – were installed. Operated by the Department of Immigration Services, the transit center temporarily hosts asylum seekers before their transfer to the larger Dzaleka Refugee Camp. Previously, asylum seekers relied on three-stone fires, unsustainably produced charcoal, or collection cooking fuel from the host community – often causing tensions. The improved cookstove offer a safer alternative to traditional stoves, consume less firewood, accommodate agricultural residues, and cook more efficiently.

Demand-Side Subsidies Component

Project Facts

Project Period	08.2022 – 09.2025
Estimated Country Budget	EUR 4,866,000
Political Partner(s)	Ministry of Energy

Progress of the DSS component in 2024

The Demand-Side Subsidies (DSS) pilot in Malawi aims to bridge the affordability gap for the most vulnerable by targeting households classified as 'poorer' and 'poorest' in the United Beneficiary Registry (UBR), a nation-wide social registry system hosted by the Ministry of Economic Planning and Development. Using a results-based financing mechanism, EnDev facilitates access to off-grid solar products and improved cookstoves for people in ultra-poor settings. The component is implemented in the districts Balaka, Dedza, Nkhata Bay, and Salima.

EnDev Malawi launched the DSS component in May 2024, along with Self Help Africa and CUMO Microfinance as fund managers and implementing partners. Thirteen off-grid solar and five improved cookstove suppliers have been contracted, and first sales were made in October. While off-grid solar sales have increased rapidly, Sales of improved cookstoves have seen slower uptake primarily due to company constraints and limited customer awareness. Another call for applications was opened in December 2024, aiming to attract additional improved cookstove suppliers and enhance sales. This is bolstered by a widespread awareness-raising campaign – including bulk SMS, radio programmes, and roadshows – regarding the technologies, available subsidies, and the UBR to enhance the pilot's visibility and boost uptake of both technologies.

A customer eligibility tool was developed and implemented to enable suppliers to assess customer eligibility and accurately allocate subsidies before making a sale. Additionally, CUMO Microfinance deployed its district officers in the implementation districts to oversee implementation, monitor progress, and provide ongoing support to participating suppliers. Given the FOREX and stock challenges in Malawi, EnDev facilitated negotiations with in-country off-grid solar distributors to ensure that participating suppliers have consistently available stock within the country.

Alignment and collaboration with the World Bank

EnDev Malawi and the World Bank have regular meetings to coordinate and align between the DSS pilot and the World Bank's Ngwee Ngwee Ngwee Fund, a component of the Malawi Electricity Access Project (MEAP). These meetings facilitate the exchange of information and experiences, which are vital for enhancing both subsidy programmes. Additionally, they enable data sharing to prevent suppliers participating in both programmes from double claiming and double counting subsidised sales.

KPI	Achieved	Target
# of people reached (total)	6,406	265,200
# of people reached with solar products	4,496	26,900
# of people reached with cooking products	1,910	238,300

DSS lessons learnt

For effective use of the customer eligibility tool, hands-on training and support to sales agents of participating suppliers should be provided throughout the implementation. This is necessary to provide a clear understanding on the use of the eligibility tool and ensure proper data collection. Additionally, having a clear mechanism for end-user identification and allocation of subsidies helps to prevent products from reaching unintended customers.

Scarcity of Forex in Malawi restricts off-grid solar imports, which in turn increases reliance on Sun King, a local off-grid solar distributor. High demand rapidly depletes their stock, impacting DSS operations. To prevent stock shortages, the Fund Manager negotiated stock reservations with Sun King to facilitate uninterrupted DSS operations.

Efficient claiming and verification processes are crucial to provide timely incentive disbursements and maintain cash flow for participating suppliers. Consistent and transparent communication with companies throughout verification facilitates processes and improves suppliers' overall satisfaction, particularly in light of the challenges arising from poor road networks and fuel shortages in the Malawi that have caused verification delays.

Mali



Country facts

Population	23.8 million
Human Development Index	Rank 188 / Index 0.410
UN Classification	LDC
Access clean cooking	1%
Access electricity	53%

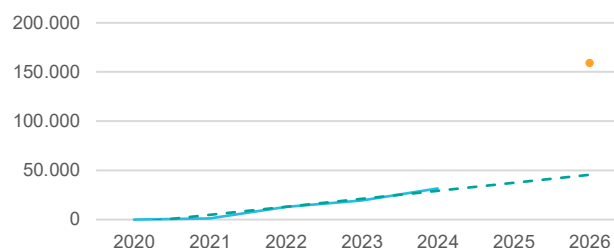
Project facts

Project period	04.2009 - 12.2026
Budget	EUR 20,600,000
Core funding incl. RBF	EUR 20,600,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 1,912,568
Implementing Organisation	GIZ, SNV, NIS
Lead political partner	Direction Nationale de l'Energie/Ministère des Mines, de l'Energie et de l'Eau du Mali

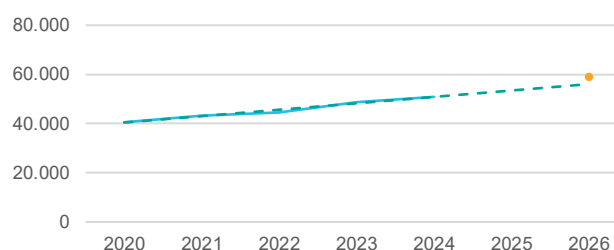
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	31,631	159,600
People: Electricity	50,870	59,000
Social institutions	559	512
MSME	714	484

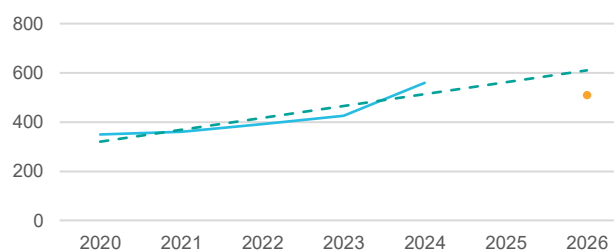
People with access to clean cooking



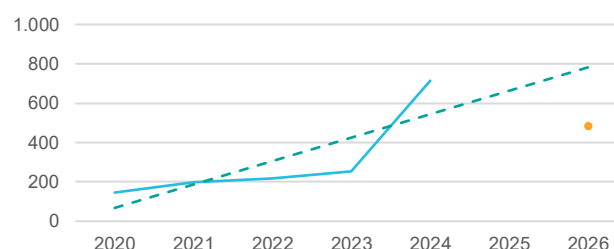
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

Energising communities: Advancing inclusive energy access



Background information

Since the military coup in 2021, Mali's political and security situation remains highly volatile. The country has integrated into the Alliance of Sahel States and decided to end the Algiers Peace Agreement. Its withdrawal from the regional organisation ECOWAS is also imminent. The instability, coupled with the deteriorating security situation, has resulted in ever-changing implementation conditions and an adversely impacted market development. The challenges have been pronounced in rural areas, where decreased purchasing power and unfavourable conditions as well as impacts of climate change hindered companies' ability to establish and maintain distribution networks. Since mid-2023, an electricity crisis has affected the solar market, driving up product prices. In 2024, in response to these challenges, EnDev further strengthened its activities targeting internally displaced people and communities in conflict areas as well as focusing on productive use technologies, while continuing to support the general development of the solar and improved cookstoves market with a comprehensive portfolio of different technologies.

Progress made in 2024

Despite the challenging circumstances, EnDev has made significant progress, focusing on productive use of energy and income generation, while anticipating growth in the improved cookstove market.

In Barouéli, 12 renewable productive use technologies, including solar pumps and freezers, were installed under communal lease-purchase agreements, enabling local communities to generate income through agricultural and commercial activities. Five large productive use of energy solutions for clean cooking were developed, three of which will be market-ready in 2025. Results-based financing incentives exceeded expectations, attracting first-time users of labelled stoves. Moreover, three new higher-tier cooking solutions were introduced, and two biodigester-compatible stoves were developed in cooperation with the African Biodigester Component of the SEE-CC project associated with

EnDev. A feasibility study also highlighted the potential for linking labelled stoves to carbon credits promising prospects for scaling these efforts.

Gender inclusion and the "Leave No One Behind" (LNOB) principle remain priorities for EnDev in Mali. In a pilot initiative, EnDev equipped two women's groups of internally displaced people with cooling systems and training in financial management to boost their income-generating capacities and resilience. In the conflict-affected northern regions, energy access expanded with 24 businesses, including 12 women-owned enterprises, receiving renewable productive use technologies for cooking and cooling. Additionally, 320 households received solar lighting systems, and 50 solar-powered streetlights were installed to enhance safety and productivity.

The Energising Health component also made significant impact, with a total of 375 health centres newly electrified, providing lighting and cooling systems for critical services, like vaccine storage. Notably, 40% of these health centres are in areas affected by instability and hosting internally displaced people, significantly improving healthcare access.

Community-Driven Energy Access Planning

To address security challenges in communities, EnDev Mali developed an innovative communal lease-purchase model. It enables local businesses to access clean and sustainable energy solutions, fostering resilience and growth. Community-run energy committees select businesses to receive renewable productive use technologies. These businesses include petrol stations, tailoring shops, and women's market gardening groups. They repay the cost of the technology into a revolving fund, which is reinvested to expand energy access within the community. By combining accessible financing with long-term sustainability, this model unlocks the economic potential of local businesses and showcases the impact of community-based energy solutions, even in fragile settings.

Mozambique



Country facts

Population	33.6 million
Human Development Index	Rank 183 / Index 0.461
UN Classification	LDC
Access clean cooking	6%
Access electricity	33%

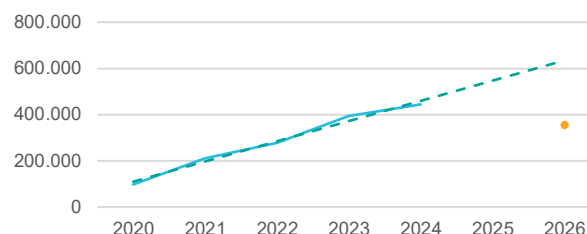
Project facts

Project period	10.2009 – 12.2026
Budget	EUR 42,091,000
Core funding incl. RBF	EUR 30,115,000
Earmarked	EUR 11,976,853
Average annual turnover of the last three years	EUR 3,566,913
Implementing Organisation	GIZ
Lead political partner	Ministry of Mineral Resources and Energy

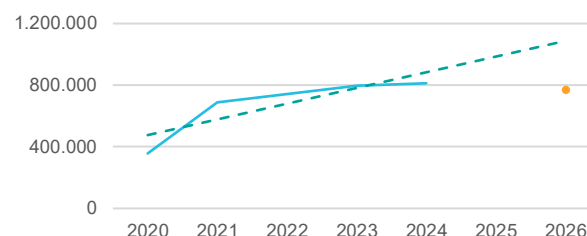
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	444,037	354,400
People: Electricity	812,387	772,100
Social institutions	7	18
MSME	74	108

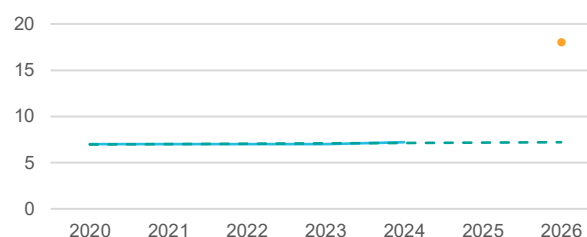
People with access to clean cooking



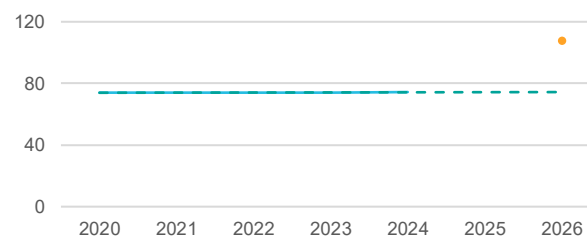
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- Trend
- Target

Scaling up for Sustainability



Background information

EnDev Mozambique continues to take a holistic and multi-faceted approach to providing demand-driven energy access to households, with a strong focus on LNOB and small- and medium-sized enterprises through off-grid electrification and clean cooking technologies. EnDev Mozambique supports an increased energy access through financial incentives, namely results-based financing, business development, ecosystem strengthening, learning transfer, innovation and policy advice.

Progress made in 2024

In 2024 EnDev strengthened its presence in the energy access market with a focus on LNOB groups. The programme focused on financing the emerging private sector through the ongoing RBF facility FASER fund (Results-Based Financing Fund for Sustainable Access to Renewable Energy). During its 5th anniversary in April 2024, a new window was launched with a focus on LNOB as a target group. Incentives have been adjusted to encourage companies to focus on the most vulnerable groups, providing either off-grid energy solutions (small-scale solar home systems), or improved cookstoves. Furthermore, smaller companies were awarded contracts in the new funding window, with half of them receiving RBF support for the first time. This strategic move aims to prepare the market for upcoming funding opportunities announced in December 2024. However, with reduced funding availability, a shorter implementation timeline, and the participation of younger, less experienced companies requiring more time and more technical assistance, EnDev Mozambique experienced a decline in the total number of households reached during this reporting period.

In addition to the RBF fund, EnDev has signed a grant with the International Organization for Migration to specifically support new market entrants for piloting mesh grids in displacement settings.

EnDev continued its support for the Biomass and Energy Certification and Testing Centre, providing services in

design, testing, standardization, and quality assurance of improved cookstoves for over ten new producer companies and 17 different prototypes. Furthermore, EnDev initiated an eCooking project for induction stoves.

In collaboration with INNOQ, the National Institute for Normalization and Standards in Mozambique, EnDev supported the adoption and adaptation of ISO/TC 285 standards, while still waiting for the importing of laboratory equipment. The introduction of improved institutional stoves in public schools was held back by the complexities of the procurement process and the prevailing political tensions in the country.

Successful approach FASER

Over the past five years, EnDev has successfully established and supported off-grid solar and clean cooking companies with results-based financing (RBF) through FASER. The primary objective of FASER is to stimulate the value and distribution chain of energy access technology markets in Mozambique by providing RBFs to off-grid solar and clean cooking companies. FASER's design and lessons learned served as an important blueprint for the design of the new World Bank funded RBF fund **energia+** under FUNAE (Fundo de Energia), ensuring the up-scaling of the approach to support the Mozambican government's goal of achieving universal access by 2030. FASER's market-based approach has been adopted and refined for the new FUNAE fund, as it has proven successful in incentivising private sector participation. The FUNAE fund is designed to accelerate the deployment of distributed renewable energy and clean cooking solutions in underserved communities, a similar range of technologies as within FASER, to promote comprehensive energy access, potentially including productive use of equipment and other appliances along the way.

Nepal



Country facts

Population	29.7 million
Human Development Index	Rank 146 / Index 0.601
UN Classification	LDC
Access clean cooking	40%
Access electricity	91%

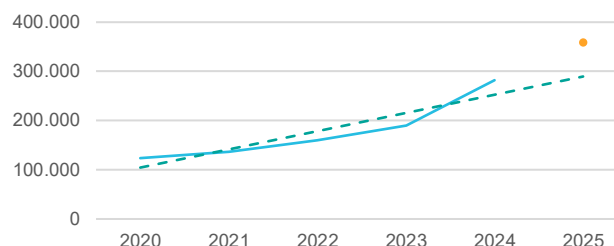
Project facts

Project period	05.2009 – 12.2025
Budget	EUR 14,812,000
Core funding incl. RBF	EUR 14,812,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 1,018,044
Implementing Organisation	GIZ, Practical Action, SNV
Lead political partner	Ministry of Energy, Water Resources and Irrigation

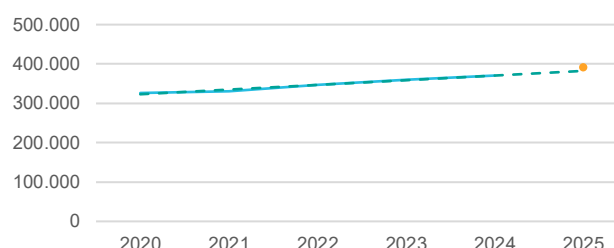
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	282,112	359,200
People: Electricity	370,620	393,200
Social institutions	1,820	1,838
MSME	4,527	5,069

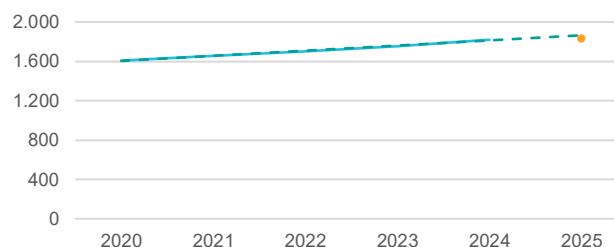
People with access to clean cooking



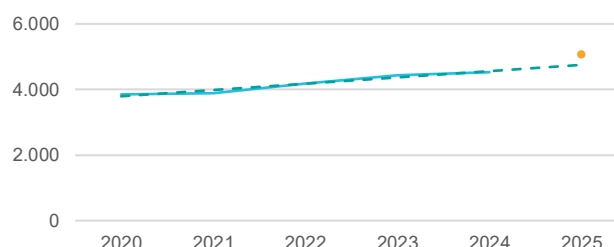
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - - Trend
- Target

“Electricity has unlocked stable income opportunities”



Background information

EnDev Nepal facilitates sustainable energy access for rural communities through a multifaceted approach involving: 1) a revolving fund for Community Rural Electrification Entities to enable them to meet project costs for extending the national grid, 2) grid extension support through grants to Local Government Units, 3) grid densification by covering initial connection costs for vulnerable groups and enterprises, adhering to a "leave no one behind" principle. Additionally, EnDev's long track record in hydropower development is exemplified by 4) the Micro-hydro Debt Fund which aims to mitigate perceived risks for commercial banks and encourages investment in off-grid hydropower projects. EnDev also extends its support beyond the electricity sector by fostering: 5) sustainable markets for electric cookstoves in rural Nepal to enhance clean cooking access.

Progress made in 2024

In 2024, EnDev facilitated electricity access to 1,400 households through a revolving fund for grid extension. Over 40% of these households were women-headed households, and 31% belonged to marginalised groups. Notably, 29% had never had electricity before. To support electricity-based businesses, concessional loans were provided to four rural electricity cooperatives, and two households to pay the upfront cost required by the government. Under the "leaving no one behind" initiative, EnDev Nepal connected 400 additional households and 50 small businesses to the grid belonging to marginalised single women or women-headed households in Sudurpaschim province, further improving energy access rates. Additionally, result-based financial support was provided to two community electricity cooperatives to restore power to households affected by landslides and floods.

For last-mile (off-grid) electrification, EnDev collaborated with the Alternative Energy Promotion Centre (AEPD) to provide technical support for integrating micro-hydro projects into the grid. Six detailed feasibility studies were completed in 2024, with grid interconnection to be implemented

in 2025. Six micro-hydro projects were connected to the national grid with funding from the Sustainable Energy Challenge Fund (SECF) and support from GIZ/REEEP-GREEN's, fostering cross-project collaboration within GIZ's energy portfolio. Building on previous collaboration with the International Centre for Integrated Mountain Development and AEPD, EnDev implemented three water-lifting projects using micro-hydro-generated electricity to improve irrigation, agriculture and rural livelihoods. Additionally, EnDev rehabilitated the long-dormant micro-hydro laboratory at Purwanchal campus, improving its reliability, efficiency, and safety. Now fully operational, the lab supports research and training for Nepal's micro/mini hydro sector.

Building on ongoing efforts, EnDev Nepal, together with SNV and Practical Action, strengthens the market for electric cooking across regions. Activities include behaviour change support, training for distributors, and localised after-sales services. These efforts aim to increase accessibility and adoption of eCooking solutions while promoting socio-economic development and environmental sustainability.

Electricity Unlocks Opportunities at Home: Story of Resilience and Growth

Bir Bahadur Bista, an entrepreneur from Sudurpaschim Province, Nepal, has seen his chowmein (noodle) business thrive after gaining access to reliable electricity through a grid densification initiative of EnDev. Previously, he relied on costly diesel generators to power his machinery, which strained his small business. With access to electricity, he now produces 200kg of chowmein a day and on a good day can make up to **35,000 NPR** (~240 EUR) a day in net profit. While sales fluctuate due to the seasonal nature of the chowmein ingredients, Mr. Bista is optimistic about its growth. He believes that access to electricity has not only improved his livelihood, but also offers hope for local youth to create opportunities at home rather than seeking employment abroad.

Niger



Country facts

Population	26.2 million
Human Development Index	Rank 189 / Index 0.394
UN Classification	LDC
Access clean cooking	6%
Access electricity	20%

Project facts

Project period	07.2022 – 12.2026
Budget	EUR 5,420,000
Core funding incl. RBF	EUR 1,020,000
Earmarked	EUR 4,400,000
Average annual turnover of the last three years	EUR 343,540
Implementing Organisation	GIZ
Lead political partner	Ministère de l'Économie et des Finances

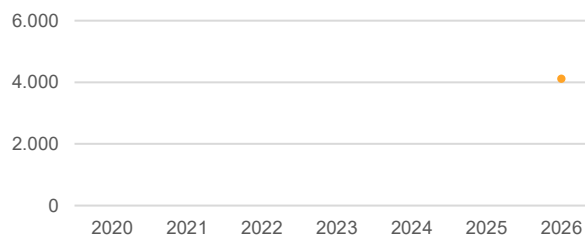
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	0	0
People: Electricity	162	4,100
Social institutions	0	0
MSME	7	29

People with access to clean cooking

2020 2021 2022 2023 2024 2025 2026

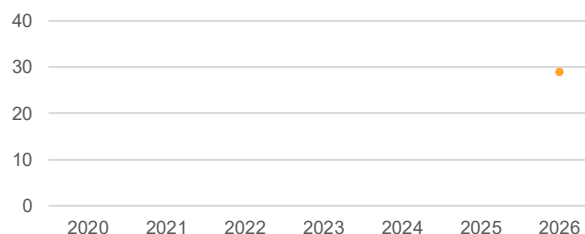
People with access to electricity



Social institutions with access to clean cooking or electricity

2020 2021 2022 2023 2024 2025 2026

MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- Trend
- Target

Building sustainable energy markets in a nascent market environment



Background information

In July 2023, a military coup took place in Niger, leading to the temporary suspension of German bilateral cooperation and the imposition of ECOWAS sanctions. These disruptions significantly affected the design and progress of EnDev's activities in Niger. Also following the regime change, the initially designated political partner, the Ministry of Plan, was merged with the Ministry of Finance.

Despite these challenges, EnDev demonstrated a high level of flexibility and adapted its implementation approach to the evolving political context and requirements. Through authorisations provided by BMZ, EnDev Niger progressively resumed its three project components – productive use of energy, off-grid solar electrification, and cooking energy – throughout 2024. These activities are complemented by demand-side subsidies for off-grid solar products to ensure poor, marginalised groups are not left behind on the road to universal energy access (see next page).

Progress made in 2024

For the development of the off-grid solar market, EnDev supports companies to enter the market and expand their commercial reach into rural areas. In 2024, EnDev launched a call for expressions of interest to identify solar companies eager to collaborate with EnDev. This led to the signing of collaboration protocols with 12 solar companies. EnDev then organised a four-day training workshop covering a range of business-related topics, with a noteworthy 27% female participation rate. The companies continue to receive dedicated support from EnDev through personalised business coaching and monthly consultation meetings.

In May 2024, EnDev resumed its Productive Use of Renewable Energy component. In collaboration with BMZ's Pro-Emploi project, EnDev successfully piloted solar water pumps with a total installed PV capacity of 4,960 Wp, improving water access to five agricultural cooperatives, of which one is female-led. Beneficiaries, 25% of whom women, received training in use, maintenance, repair, and

environmental-friendly e-waste management. EnDev also established a partnership with UNHCR to pilot and promote various productive use of energy technologies, such as grinders, refrigerators, water pumps, welding, and sewing machines, at a refugee community centre in the department of Madaoua. This collaboration aims to transform community centres into business hubs for vulnerable enterprises led by refugees and host community members. A further collaboration with the "Sahel Resilience Partnership" programme, co-jointly implemented by GIZ, World Food Programme, and UNICEF, was also established.

In November 2024, EnDev Niger resumed its cooking component and initiated contracting of a market study, which will be conducted to better understand supply and demand side dynamics as well as identify major causes of failed clean cooking initiatives in the past. The results will serve to design appropriate market measures to promote clean cooking in Niger.

To enhance outreach and inclusivity, EnDev developed a Gender Action Plan as well as a communication strategy to design culturally appropriate, gender-sensitive awareness-raising campaigns across all project components.

Creating economic perspectives for the youth in the Nigerien solar sector

Recognising Niger's emerging solar market and the absence of rural distribution networks and after-sales services, EnDev enhances young people's technical expertise in these areas. Through EnDev's training in the installation, maintenance, and repair of solar water pumps, young technicians are already being hired by farmers in neighbouring villages to conduct repairs and maintenance on solar equipment. This initiative not only creates new job opportunities, but also fosters sustainable local development, enhances the community's self-sufficiency, and improves economic prospects for young people.

Demand-Side Subsidies Component

Project Facts	
Project Period	08.2022 – 09.2025
Estimated Country Budget	EUR 4,400,000
Political Partner(s)	Ministère de l'Economie et des Finances

Progress of the DSS component in 2024

Significant progress has been made in establishing the set-up for the Results-Based Financing for Decentralised Solar Solutions (RBF-DSS) pilot in Niger. The pilot aims to bridge the affordability gap facing targeted vulnerable households – refugees, internally displaced people, and host community members – in Bagaroua, Bangui, and Guidan-Roundji. By reducing consumer prices, the pilot will facilitate access to off-grid solar products classified as Tier 1 by the Multi-Tier Framework.³⁰

In early 2024, a baseline study was conducted in the three targeted host communities to assess electricity needs and socio-economic conditions among the households to help determine eligible products and subsidy levels. EnDev contracted Mercy Corps as the project’s fund manager and key implementing partner. In close collaboration with Mercy Corps, project documents were finalised, and a customer eligibility tool was developed to enable suppliers to assess customer eligibility at the point of sale. Additionally, EnDev commissioned a local artist to create a DSS-branding and awareness raising materials.

The project officially launched in October 2024 with a call for applications for local solar companies. Following a rigorous evaluation and selection process, supported and accompanied by an independent auditor, five companies were selected. First sales are expected in the first quarter of 2025.

Given the nascent solar market, EnDev also provides complementary supply side support and technical assistance to participating companies. This includes support for expanding distribution chains to the last mile through the establishment of strategically located selling points, training of local sales agents and technicians, and supported marketing activities. EnDev closely coordinates with local authorities to ensure the effectiveness of these initiatives.

Alignment and collaboration with the World Bank

EnDev will align with the World Bank funded HASKE project, which will commence in 2025. HASKE seeks to increase access to modern energy services in Niger through grid, mini-grid, and off-grid solutions. The off-grid component will include an RBF facility to incite solar companies to expand distribution channels into remote areas, including displacement settings.

Initial exchanges focusing on alignment and a potential collaboration took place in 2022 and early 2023, and resumed again in end 2024. EnDev and World Bank established a regular exchange format and initiated discussions to ensure alignment between the two projects and explore potential for scale-up.

KPI	Achieved	Target
# of people reached with solar products	N/A	47,500

DSS lessons learnt

Working in an uncertain political and economic environment requires a high degree of flexibility and adaptability in the design and implementation of DSS mechanisms. The EnDev Niger DSS pilot is designed to respond in an agile manner to any contextual changes. Therefore, developing a scalable, market-based RBF-DSS facility in a fragile country context can serve as a valuable learning case for promoting modern energy access in rural displacement settings.

Implementing a market-based RBF-DSS facility for the first time in a very nascent solar market, as in Niger, is associated with various challenges and barriers. Business models of the private sector are fully adapted to the humanitarian context, and there is very limited awareness about the benefits of quality certified off-grid solar products at the demand side. The DSS pilot can therefore play a crucial role to catalyse market development in the Nigerien solar sector, allowing solar companies to develop sustainable business models, expand their distribution channels into new regions and to remote areas, and increase the awareness of the rural population for the benefits of solar solutions.

³⁰ The DSS pilot in Niger only supports Tier 1 solar products as defined by the [Multi Tier Framework](#).

Rwanda



Country facts

Population	14.0 million
Human Development Index	Rank 161 / Index 0.548
UN Classification	LDC
Access clean cooking	8%
Access electricity	51% ³¹

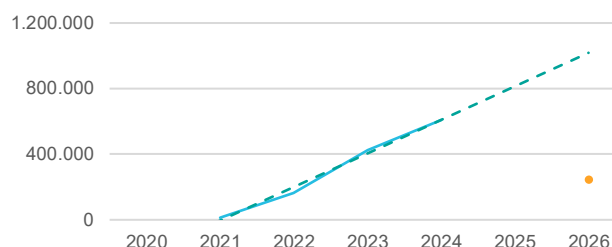
Project facts

Project period	10.2009 – 12.2026
Budget	EUR 34,824,000
Core funding incl. RBF	EUR 27,449,300
Earmarked	EUR 7,374,700
Average annual turnover of the last three years	EUR 1,774,649
Implementing Organisation	GIZ, AVSI, SNV
Lead political partner	Ministry of Infrastructure (MININFRA)

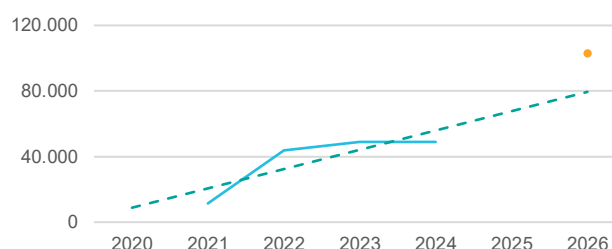
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	608,442	247,300
People: Electricity	48,946	103,200
Social institutions	11	20
MSME	73	432

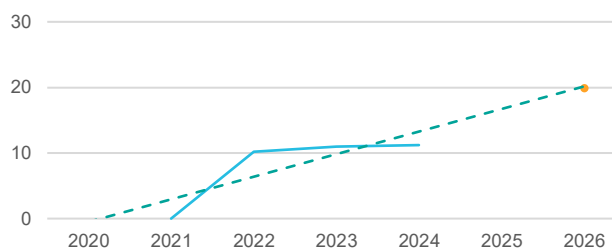
People with access to clean cooking



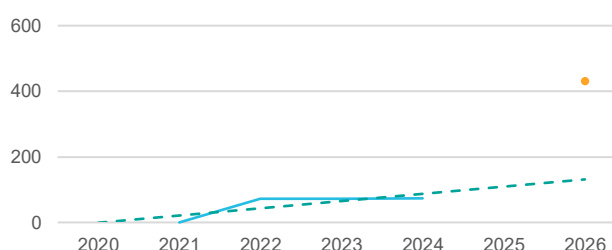
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

³¹ These ESMAP figures are from 2022, while the Rwandan government has published updated figures for electrification rates in 2024, see next page.

Leveraging electricity uptake for a sustainable path to eCooking



© Solektra

Background information

In its second National Strategy for Transformation, the Government of Rwanda aims to achieve universal access to electricity by 2029. This target remains within reach, given the significant progress made by June 2024, when the electricity connection rate reached 79% in urban and rural areas, with 56% of households connected to the grid³².

In terms of clean cooking, the Energy Sector Strategic Plan 2024-2029 sets ambitious targets to reduce reliance on traditional biomass, which currently accounts for 76% of the energy used for cooking. The plan aims to increase the use of improved cookstoves to 22% (Tier 3+) and access to clean cooking solutions such as electricity, liquefied petroleum gas, and ethanol to 27%. To support this transition, the government has enacted a ban on stoves rated below Tier 3, effective from January 2024.

Progress made in 2024

In 2023, EnDev established a partnership with Practical Action through the *Results-Based Financing for Refugees (RBF4R)* initiative, building on the success of an ongoing Swedish-funded humanitarian energy project. The primary goal of this collaboration is to increase access to higher-tier cooking stoves for the most vulnerable refugee households in five camps across Rwanda. In 2024, three stove companies were contracted, and by mid-January 2025, more than 200 higher-tier stoves, mainly forced-air draft stoves, had been distributed. Additionally, 50 women entrepreneurs have been selected to receive support in the productive use of energy. Two suppliers have been contracted, and the training and distribution of appliances, including refrigerators, is underway.

In 2024, the *Productive Use of Renewable Energy in Agricultural Value Chains (PURE.Ag)* project was launched by EnDev, partnering with MC-E4I and EUCORD to help small-holder farmers access solar-powered irrigation through flexible payment methods such as Pay-As-You-Go (PAYGo). Four local solar water pump companies have been recruited and are actively selling under a PAYGo mechanism, supported by results-based financing. In addition, farmers,

district officials, agronomists, and financial institutions have been engaged and trained in the design and operation of solar-powered irrigation kits.

Sustainable eCooking Access to Leverage Electricity Uptake

In October 2024, Rwanda joined the Global Electric Cooking Coalition (GeCCo), a global initiative with EnDev as an anchor partner to promote electric cooking and to scale up access worldwide. In line with the GeCCo mission, EnDev Rwanda launched the *Sustainable eCooking Access to Leverage Electricity Uptake* (SCALE.up) project, with the support of RVO innovation funding. SCALE.up targets three main issues: the high use of biomass for cooking, low household electricity consumption, and the need to provide sustainable market signals to change behaviour towards eCooking.

SCALE.up consists of two sub-projects:

- 1) Grid Densification: Aimed at bridging the electrification gap for 3,450 households in urban and peri-urban areas by extending low-voltage networks, providing internal wiring, covering connection fees, and distributing eCooking electricity tokens to 500 households.
- 2) eCooking: Targeting support to 1,600 households (of which 30% are women-headed) currently using charcoal to switch to eCooking by providing subsidies for eCooking appliances, support to ensure the appliances are metered, and rebates for metered electricity used for cooking.

SCALE.up is expected to provide valuable information on the role of electricity tariffs in behaviour change, which will be shared across the East African Community. This will help inform the design of preferential eCooking tariffs and the potential for related climate finance. SCALE.up takes a gender-responsive approach, prioritising women-headed households through targeted campaigns and eCooking demonstrations.

³² [Energy Sector Strategic Plan \(ESSP\) 2024-2029](#)

Senegal



Country facts

Population	18.1 million
Human Development Index	Rank 169 / Index 0.517
UN Classification	LDC
Access clean cooking	32%
Access electricity	68%

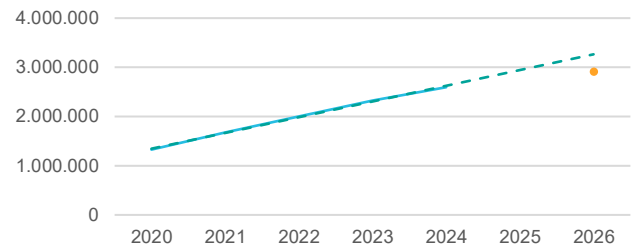
Project facts

Project period	04.2009 – 12.2026
Budget	EUR 33,337,000
Core funding incl. RBF	EUR 26,967,000
Earmarked	EUR 6,370,000
Average annual turnover of the last three years	EUR 2,471,678
Implementing Organisation	GIZ
Lead political partner	Ministry of Petroleum and Energy

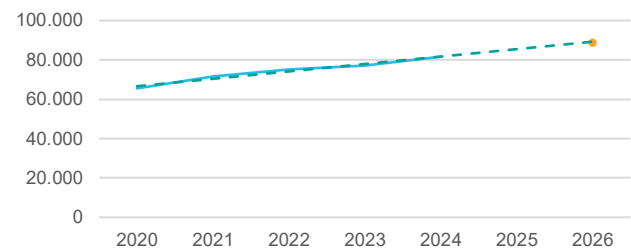
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	2,595,289	2,913,400
People: Electricity	81,604	88,900
Social institutions	1,454	1,361
MSME	1,092	1,456

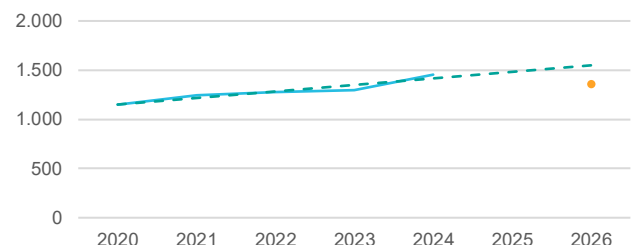
People with access to clean cooking



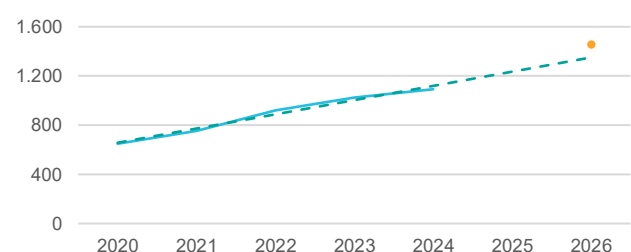
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - Trend
- Target

Powering small businesses: Solar hair clippers empower a new wave of entrepreneurs



Background information

EnDev supports Senegal's government in achieving its Nationally Determined Contributions (NDCs) to the Paris Agreement and its national strategy for universal electricity access. The project played a key role in the growth of the market of improved cookstoves from 2006 to 2020³³. Building on this foundation, current efforts focus on 1) sustainable fuel production, 2) business support for women's groups in cookstove production, 3) piloting higher-tier cooking solutions, and 4) promoting biomass energy use in fish processing and traditional bakeries. In rural electrification, EnDev continues to drive innovation and incubation of renewable off-grid energy solutions. It also implements the EU-co-financed action *Pro-Accès* supporting off-grid electrification and contributes to the Energising Health initiative equipping rural health facilities with solar-powered equipment. Since 2023, EnDev has aligned its activities with national universal access targets and "Leave No One Behind" principles, promoting inclusivity in energy access strategies.

Progress made in 2024

In 2024, EnDev expanded its efforts in the biomass sector by training 18 local companies along Senegal's coast to construct the "Nopalé" improved fish-smoking kiln, developed and piloted by the project over the past years. The technology was also introduced in Gambia, through a training-of-trainers workshop at a Gambian University. Converting traditional kilns to Nopalé models significantly reduces emissions, sparking discussions with the ministry on large-scale kiln transformations to modernise Senegal's fish-smoking sector. Several companies and non-governmental organisations showed interest, accelerating the kiln's broader adoption. Building on this success, EnDev also developed an enhanced oven for traditional bakeries as another productive use of biomass. A prototype has shown promising wood consumption results and field pilots are planned for 2025.

EnDev also made significant strides in expanding access to clean and reliable electricity, particularly for low-income and remote populations. EnDev installed safe interior electric installations to improve safety and electricity availability for households with limited financial resources in grid-connected villages. Four second-generation mini-grids, nearing completion, will serve as demonstration models for an enhanced mini-grid concept. Additionally, continued support for women's groups as solar lamp retailers has helped extend electricity access in remote localities, including the poorest and formerly displaced households.

The EnDev Health initiative has provided 120 health centres in rural Senegal with solar fridges for vaccine storage and solar systems to operate essential medical equipment, greatly improving healthcare in these regions. Building on a successful pilot with EU co-financing that distributed solar kits to remote communities, EnDev is preparing for its expansion. In response to strong demand for innovations and the integration of productive use of energy within existing mini-grids, the project plans to extend to additional sites, further supporting universal electricity access.

From Mills to Hair Clippers: How a Community Fund is Scaling Impact

In 2021, EnDev introduced a community-based initiative to promote the productive use of electricity in mini-grids and standalone solar systems. Through a multi-stakeholder committee managing a revolving fund, entrepreneurs gained access to essential equipment such as mills, freezers, and sewing machines on credit. These new income-generating opportunities have proven transformative, with the first beneficiaries successfully repaying their loans and proudly owning their equipment. Their repayments have helped expand the fund, enabling the purchase of solar hair clipping kits for additional clients. This initiative highlights the potential of the community-led model to drive sustainable economic growth and empowerment in off-grid areas.

³³ Since 2020, this activity is being continued through EnDev's associated project "Promotion of climate friendly cooking: Kenya and Senegal", financed by BMZ and the Green Climate Fund (GCF)".

Sierra Leone



Country facts

Population	8.5 million
Human Development Index	Rank 184 / Index 0.458
UN Classification	LDC
Access clean cooking	1%
Access electricity	29%

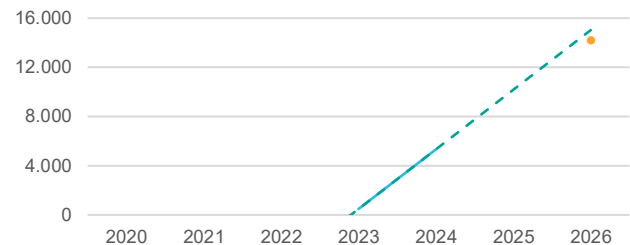
Project facts³⁴

Project period	07.2017 – 12.2026
Budget	EUR 9,049,000
Core funding incl. RBF	EUR 5,549,000
Earmarked	EUR 3,500,000
Average annual turnover of the last three years	EUR 1,455,390
Implementing Organisation	GIZ
Lead political partner	Ministry of Energy

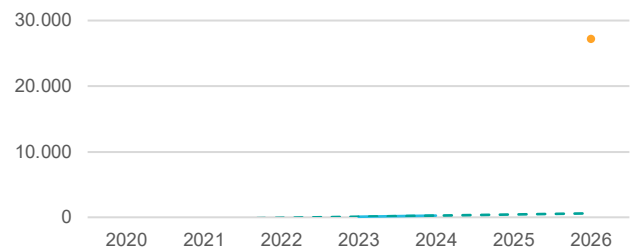
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	5,328	14,200
People: Electricity	258	27,200
Social institutions	66	336
MSME	0	68

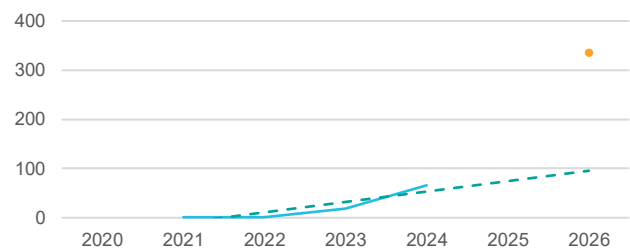
People with access to clean cooking



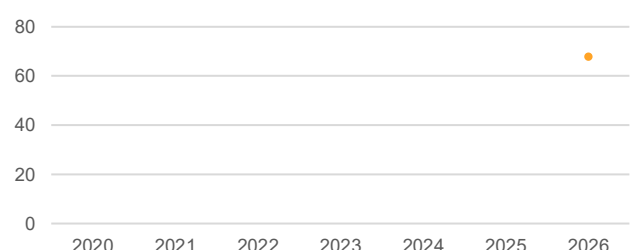
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- Trend
- Target

³⁴ Previously, Sierra Leone, Liberia, and Guinea were part of a multi-country approach. As of 07/23, Sierra Leone and Liberia were presented separately with separate budgets and indicative targets, while Guinea concluded in 12/2023.

Boosting market development for improved cookstoves and solar systems



©AVSI 2024

Background information

In Sierra Leone, approximately 99.1% of households rely on biomass for cooking, with the majority using fuelwood (71.2%), followed by charcoal (27.9%), LPG 0.6%, biomass and biogas stoves amount to 0.3%. Access to improved cookstoves, higher-tier cooking solutions, and sustainable clean fuels remains limited. Electricity access is also low, with 21.1% of households have access via the national grid (20.5%) or mini-grid (0.6%), and 14.7% have off-grid access.³⁵ Mini-grid electricity in rural regions is often unreliable and unaffordable, prompting many households to turn to solar lanterns, solar home systems, and standalone systems for productive use of energy. EnDev works closely with the government, donors, international and local non-governmental organisations, private sector stakeholders, and development partners to expand access to clean and reliable energy, improve renewable energy uptake, and promote clean cooking solutions in the country.

Progress made in 2024

In partnership with AVSI and the private sector, EnDev Sierra Leone has made good progress in 2024 in expanding access to clean cooking solutions for households, social institutions, and public facilities.

To strengthen local expertise, the project has trained artisans and startup producers of improved cookstoves across the western, southern, and eastern provinces of Sierra Leone. The project provided hands-on training in stove design, assembly, and installation, alongside essential marketing skills to help producers grow their businesses. Participants also received startup kits and materials, ensuring they have the tools to manufacture efficient improved cookstoves. By training youth and women, the initiative not only fosters economic empowerment but also builds a resilient supply chain that can sustain long-term market growth.

In collaboration with AVSI and the Sierra Leone Standards Bureau, EnDev provided technical training for staff at the

testing laboratory for improved cookstoves and recalibrated its testing equipment. These improvements enhanced the lab's ability to evaluate and standardise products for improved cookstoves, ensuring product quality and efficiency. These interventions will accelerate to the achievement of the target by 2026.

Beyond cookstove development, EnDev Sierra Leone progressed in rural electrification. Through technical and competency-based training, the project equipped solar technicians with the expertise needed to assess systems, design and install solar solutions, evaluate tenders, and ensure compliance with required industry standards. Additionally, EnDev has designed and prepared an RBF mechanism that will enable the project to reach its electrification targets. Further to this, EnDev supported the Renewable Energy Association of Sierra Leone (REASL) and worked closely with the Ministry of Energy to assess the impact of the Goods and Services Tax on solar products, advocating for a more favourable market environment for renewable energy.

On the institutional level, EnDev's contribution is widely recognised in Sierra Leone's Energy and Mini-Grid Working Groups, where the project advises on achieving the national energy objectives.

Promoting cleaner, more efficient cooking

To increase awareness of improved cookstoves and their advantages over traditional stoves and the three-stone cooking method, EnDev Sierra Leone launched a series of awareness campaigns together with its public- and private sector partners.

These included road shows, radio discussions, point of sales, and jingles in local languages.

As a result of these efforts, households across various communities became aware of the benefits of improved cookstoves. The campaign's success has also empowered the producers of improved cookstoves, who are now self-sufficient and able to sustain an improved livelihood.

³⁵ [World Bank: Sierra Leone - Beyond Connections \(2024\)](#)

Tanzania



Country facts

Population	66.7 million
Human Development Index	Rank 167 / Index 0.532
UN Classification	LDC
Access clean cooking	9%
Access electricity	46%

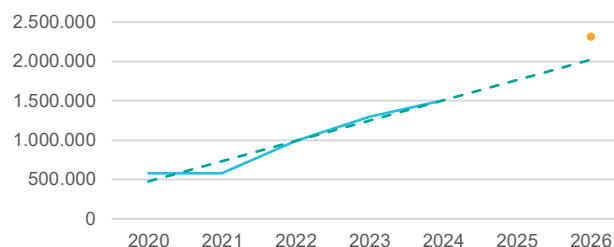
Project facts

Project period	12.2012 – 12.2026
Budget	EUR 16,581,000
Core funding incl. RBF	EUR 16,581,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 1,112,669
Implementing Organisation	SNV
Lead political partner	Ministry of Energy

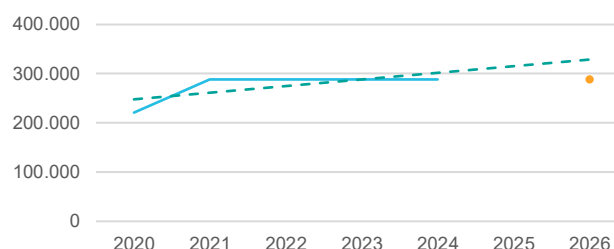
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	1,506,401	2,317,000
People: Electricity	288,377	288,400
Social institutions	0	0
MSME	220	220

People with access to clean cooking



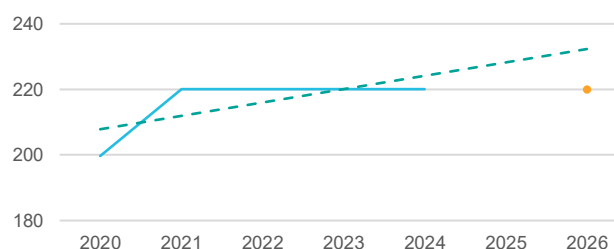
People with access to electricity



Social institutions with access to clean cooking or electricity

2020 2021 2022 2023 2024 2025 2026

MSME with access to clean cooking or electricity



— People, Social institutions, MSMEs
 Trend
 • Target

Advancing Clean Cooking: Transitioning to eCooking in Tanzania



© SNV

Background information

Following a strategic shift of focus in the past, EnDev Tanzania continues concentrating all its energy on supporting improved cookstoves and eCooking devices, promoting behavioural change, and strengthening the enabling environment. The project improves access to clean cooking solutions for peri-urban and rural households by training producers, enhancing product quality, and strengthening market linkages. With Jiko Matawi stove producers active in 20 regions, hundreds of thousands of households have gained access to affordable, high-quality improved cookstoves.

Progress made in 2024

In 2024, EnDev provided technical and business development training to Jiko Matawi stove producers. Based on verified sales, producers received non-monetary incentives, such as production tools, facility upgrades, and marketing equipment. Gender-inclusive training sessions helped integrate spouses into business development, while promotional materials and one-on-one coaching further strengthened producers' capacities.

Behavioural change and communication activities have significantly boosted clean cooking adoption. Eighteen Jiko Matawi enterprises received training in communication, sales pitching, and marketing, improving their ability to reach customers. Sixty Clean Cooking Advocates were trained, creating new income opportunities while promoting clean cooking. Seven Jiko Matawi Kiosks and Ideal Kitchen demonstration units became fully operational, improving access to clean cooking solutions. Two new districts were added, including one serving refugee host communities, further expanding outreach.

EnDev also facilitated access to clean cooking appliances through innovative financing. Green Light Planet (Sunking) and ZOLA Electric were selected to scale up eCooking initiatives through the Pay-As-You-Go (PAYGO) model, making appliances more affordable. These companies received

matching stock grants for imported eCooking products and results-based financing for verified sales.

To expand access to electric pressure cookers, EnDev partnered with local Savings and Credit Cooperative Societies (SACCOS) through a revolving fund. Six SACCOS in Morogoro and Kilimanjaro provided loans for eCooking products, and three more onboarded in 2024.

By the end of the year, 1,164 electric pressure cookers and induction cookers have been sold, demonstrating increasing demand. Nine cooperatives received initial stock units of electric pressure cookers, induction stoves, and rice cookers, which they sold under a revolving fund arrangement, ensuring continued access for their members.

Regarding the fostering of an enabling environment, EnDev supported the Tanzania Renewable Energy Association (TAREA) and the Tanzania Association of Clean Cooking Stakeholders (TACCS), enabling their participation in the International Energy Agency Africa Clean Cooking Summit in Paris. Additionally, EnDev co-financed the launch of the TACCS Women Chapter to address challenges faced by women in the energy sector.

Elimu SACCOS: Financing Clean Cooking for Lasting Impact

Through the revolving fund model, Elimu SACCOS expanded access to clean cooking, cycling the fund multiple times and selling 255 electric pressure cookers, benefiting over 1,000 people. The cooperative reported profits exceeding EUR 2,000, motivating continued investment in clean cooking technologies. Members expressed gratitude for the opportunity to purchase an electric pressure cooker on instalments, citing its convenience for working parents and its ability to save both time and money.

This model has proven to be a sustainable business line for the cooperative, demonstrating the potential for clean cooking solutions to create economic and social benefits.

Uganda



Country facts

Population	48.7 million
Human Development Index	Rank 159 / Index 0.550
UN Classification	LDC
Access clean cooking	1%
Access electricity	47%

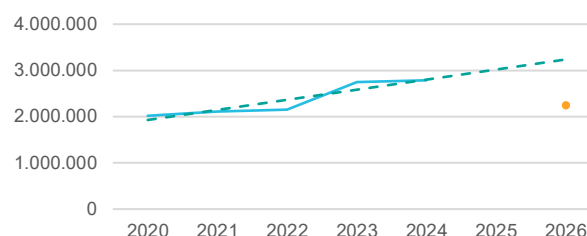
Project facts

Project period	04.2009 – 12.2026
Budget	EUR 30,940,000
Core funding incl. RBF	EUR 23,274,000
Earmarked	EUR 7,666,000
Average annual turnover of the last three years	EUR 3,643,934
Implementing Organisation	GIZ
Lead political partner	Ministry of Energy and Mineral Development (MEMD)

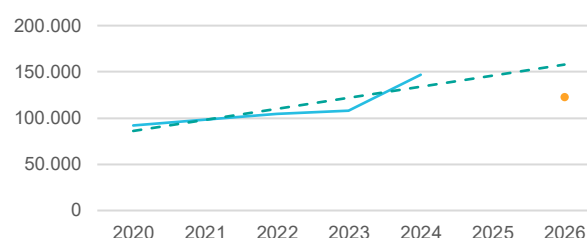
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	2,786,663	2,254,000
People: Electricity	146,843	123,000
Social institutions	1,634	1,401
MSME	3,091	2,633

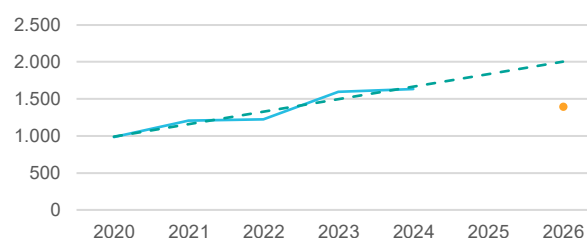
People with access to clean cooking



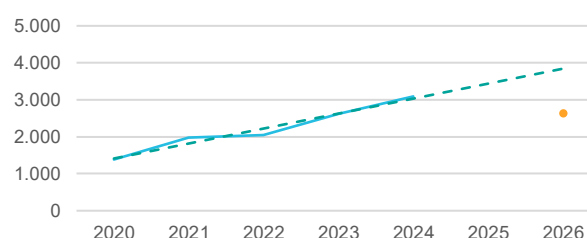
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- - - - - Trend
- Target

Powering solar water pumps in the Rhino Camp Refugee Settlement



Background information

In Uganda, EnDev collaborates with various partners using market-based approaches to expand energy access and strengthen the framework conditions of the solar and clean cooking sub-sectors. With a focus on off-grid electricity and clean cooking solutions, including higher-tier cooking, EnDev supports households, social institutions, small and medium Enterprises (MSMEs) nationwide. EnDev's activities also extend to refugees and host communities, ensuring inclusive access to energy for all.

Progress made in 2024

The cooking component continued to expand access to improved cooking technologies, with a particular emphasis on food vending businesses. Through its Results-Based Financing (RBF) and Business Development Support, EnDev has facilitated the distribution of improved cookstoves and higher-tier cooking (HTC) technologies to households and MSMEs. EnDev's HTC initiative aims to further support scaling access to eCooking appliances through targeted technical assistance for companies with demonstrated experience from previous pilots, innovative business models, and parallel awareness efforts. In collaboration with the HTCC Uganda project, EnDev also contributed to joint awareness campaigns with key stakeholders, conducting a testing lab capacity assessment. Furthermore, EnDev provided targeted Gender, Equity, and Social Inclusion (GESI) training for partners to enhance gender transformation in the country.

The solar component continued to promote productive and institutional use of electricity through an RBF partnership with Equity Bank Uganda Limited that enables farmers, saloons, small businesses, and schools to access electricity. It also includes gender incentives for women-led enterprises. Additionally, EnDev partnered with Private Sector Foundation Uganda to implement an LNOB RBF targeting hard-to-reach, vulnerable households. To strengthen resilience and investment readiness, a third round of Business Development Support was launched for ten participating

solar and cooking MSMEs. Additionally, EnDev partnered with local and international solar sector associations to promote awareness and drive discussions on increased solar adoption.

In support of refugee and host communities, EnDev completed the second RBF cycle for solar lanterns and solar home systems, combining supply-side and demand-side subsidies to boost accessibility and affordability in the targeted locations. EnDev also launched targeted business development support for cooking and solar RBF partners to address challenges such as transport and after-sales services. Additionally, EnDev partnered with a micro-finance institution to provide loans for productive use of energy, particularly small-scale water irrigation systems for smallholder farmers.

Successful farming with solar powered water pumps in the Rhino Camp Refugee Settlement

Living along the shore of the River Nile, Mike and Night, both members of the hosting community, have been subsistence farmers in Rhino Camp Settlement for 14 years. In March 2024, they secured an energy loan from EnDev's partner, VisionFund Uganda, a microfinance institution providing energy loans to refugees and host communities. The loan enabled them to acquire a solar-powered water irrigation pump. "In the past, we relied on rainwater and, during dry seasons, had to carry water in jugs to irrigate our vegetable garden," Mike and Night recall. Now with the pump, they can water crops at any time, have expanded their cultivated land fourfold, and have seen vegetable sales increase significantly. They've already repaid the loan and can now afford school fees for their four children and a younger brother studying medicine. Their success has inspired others in the community—so far, eight more farmers have taken energy loans from VisionFund for purchasing solar water pumps, with growing interest from many more.

Demand-Side Subsidies Component

Project Facts

Project Period	08.2022 – 09.2025
Country Budget	EUR 4,900,000
Political Partner(s)	Ministry of Energy and Mineral Development

Progress of the DSS component in 2024

By lowering consumer prices, the DSS pilot in Uganda aims to facilitate energy access for refugees, host communities and other vulnerable rural populations. Using an RBF approach, it supports solar lanterns and solar home systems classified as Tier 1 by the Multi-Tier Framework, as well as improved cookstoves and higher-tier cooking (HTC) technologies such as ethanol stoves and electric pressure cookers. Building on the significant progress made in 2023, the project launched in January 2024 with a call for applications for solar and cooking companies. In total, 8 solar companies and 9 cooking companies were contracted, with initial sales starting in May.

To mark the official launch, regional and central events were held in Northern Uganda and Kampala, attracting key stakeholders from the private sector, government, and implementing partners. To facilitate operations within the refugee settlements, EnDev also introduced the contracted companies to key authorities, including the Office of the Prime Minister and settlement leadership. This engagement secured necessary permissions and strengthened collaboration between companies and local leadership. Sales quickly took off, especially for solar and HTC products. Improved cookstove companies, facing low profit margins, experienced challenges in reaching these remote markets.

A midterm review conducted by EnDev and the Private Sector Foundation Uganda (PSFU), the project's fund manager and implementing partner, assessed overall progress, subsidy levels, disbursement status, verification processes, and awareness raising efforts. Furthermore, field visits to the target regions aimed to evaluate the performance of the companies and ensure that the intended beneficiaries were reached. Insights from the review led to several adjustments to the pilot, including revising improved cookstove prices and subsidy levels to better reflect operational costs, which were initially underestimated by companies due to limited experience in remote markets. These adjustments aim to increase current improved cookstove sales and encourage companies to adopt sustainable pricing for hard-to-reach markets.

Alignment and collaboration with the World Bank

EnDev Uganda coordinates closely with the World Bank and the Uganda Energy Credit Capitalisation Company (UECCC). The World Bank funded Electricity Access Scale Up Project (EASP), implemented by UECCC, aims to increase access to clean energy for households, commercial enterprises, industrial parks, and public institutions. One of the EASP's components is an RBF providing demand and supply side subsidies nationwide, including in displacement context.

Several alignment meetings were conducted between EnDev, UECCC, the EASP team, and the World Bank, resulting in a successful alignment of subsidy levels for all overlapping technologies with the exception of biomass improved cookstoves, where implementation is pending on the UECCC side. This alignment aims to reduce the potential for market distortion and improve synergies between the two projects.

KPI	Achieved	Target
# of people reached (total)	37,922	249,400
# of people reached with solar products	34,561	41,300
# of people reached with cooking products	3,361	208,100

DSS lessons learnt

Several insights have emerged throughout project implementation in Uganda. One significant realisation is the need for technical support from the outset to assist participating companies, particularly those with low-profit margins such as improved cookstoves companies, to develop pricing models that balance costs with affordability for end users in remote markets.

The utilisation of a customer eligibility tool has proven effective in enabling companies to accurately target intended beneficiaries and provide real-time, disaggregated sales data to EnDev and PSFU for monitoring project progress. Additional verification functionalities within the tool would streamline processes even further.

Phase out

- Bolivia

Bolivia – Phase out



Country facts

Population	12.2 million
Human Development Index	Rank 120 / Index 0.698
UN Classification	LLDC
Access clean cooking	89 %
Access electricity	100 %

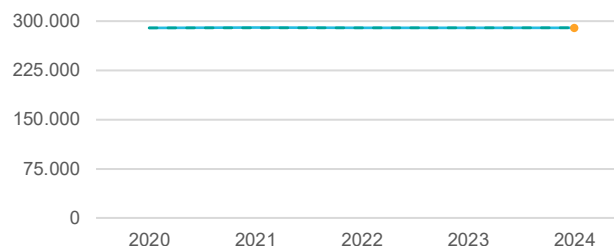
Project facts

Project period	10.2009 – 06.2024
Budget	EUR 19,942,000
Core funding incl. RBF	EUR 19,942,000
Earmarked	EUR 0
Average annual turnover of the last three years	EUR 677,085
Implementing Organisation	GIZ
Lead political partner	Vice-Ministry of Electricity and Alternative Energy (VMEEA) of the Ministry of Energy

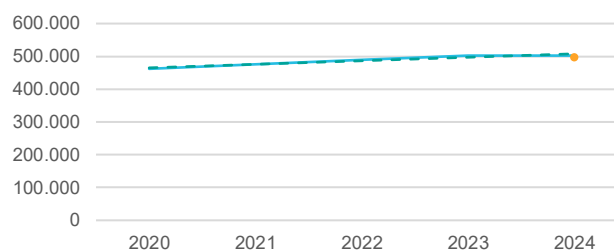
Achievements in energy access

Target group	Reached	Target
People: Clean cooking	289,838	289,841
People: Electricity	502,277	497,572
Social institutions	7,670	7,654
MSME	19,931	18,900

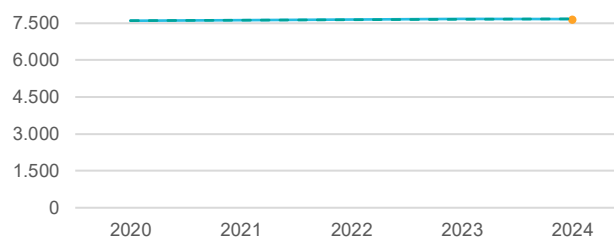
People with access to clean cooking



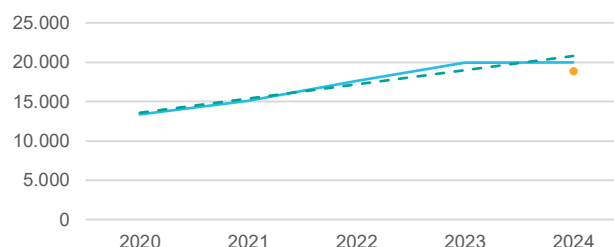
People with access to electricity



Social institutions with access to clean cooking or electricity



MSME with access to clean cooking or electricity



- People, Social institutions, MSMEs
- Trend
- Target

Reflecting 18 years of transforming energy access



Key achievements

After 18 years of implementation, EnDev Bolivia phased out in June 2024, leaving behind a significant legacy of progress in energy access. Over its duration, the programme facilitated electricity access - both on-grid and off-grid - for more than 500,000 people and 7,650 social institutions, while nearly 290,000 people gained access to clean cooking solutions. Additionally, almost 19,000 micro, small, and medium-sized enterprises benefitted from modern energy and technology for productive uses. During the phase-out process, EnDev's strategies, knowledge, and best practices were transferred to public and private partners as well as civil society.

In the following, the main findings from the exit study of EnDev Bolivia are presented, using the OECD DAC evaluation criteria: Relevance and coherence, effectiveness, efficiency, impact, sustainability

Relevance and coherence

In 2005, when EnDev Bolivia started, only 33% of the rural population had access to **electricity**. The constitution of 2009 and a national plan in 2014 established policies and goals to reduce poverty and ensure universal electricity access by 2025. EnDev has been closely aligned with the electrification policies and significantly contributed to this goal by collaborating with the national electricity company ENDE to expand higher-tier electrification to remote rural areas. The collaboration involved procuring high-quality electrical equipment and providing training for ENDE, its subsidiaries, and rural electricity cooperatives. In addition, remote areas that were unlikely to be connected to the national grid in the medium to long term became the primary focus of EnDev's intervention. It is also in these last-mile locations where EnDev promoted the creation and development of rural market niches for solar-photovoltaic systems, to continue fostering energy access. As a result of the efforts deployed by the Government of Bolivia and its partners, including EnDev Bolivia, 83% of rural households now have access to electricity.

To enhance access of **clean cooking** solutions, EnDev provided improved cookstoves for close to 300,000 people on household level. These efficient stoves significantly reduced firewood use and avoided intra-domiciliary pollution.

Prior to EnDev, few efforts existed to promote the **productive use of energy** in rural areas. In the agricultural sector, postharvest losses fluctuated between 30% to 80%, depending on the type of product, and local value addition was practically non-existent. The GOB did support the provision of equipment for the productive use of energy, but it lacked the necessary capacities to oversee proper operation and maintenance; thus, sustainability of its interventions was not guaranteed. EnDev's productive use of energy activities played a crucial role in supporting associations and cooperatives to enhance their production and income generation, with a strong gender approach and focus on specialised technical advice rather than on high subsidies. Despite the persistence of specific challenges in the sector, there is a noticeable shift in the attitudes of both supply and demand-side actors. EnDev has emerged as the primary point of reference for initiatives for the productive use of energy in the country, and the promotion has gained traction among various stakeholders in the energy sector, including the GOB and relevant non-governmental organisations and cooperations, such as Practical Action and IICA.

Effectiveness

EnDev Bolivia consistently met or exceeded its targets by adapting to local conditions, technologies, and political contexts. Its success was driven by strong collaboration with stakeholders, capacity-building efforts, and the use of high-quality materials, earning a reputation as a trusted and competent partner. The programme's achievements were largely the result of two key initiatives: FASERTe and FEM. FASERTe focused on supply-side interventions, supporting nearly 3,800 households, micro, small, and medium-sized enterprises, and social institutions. In partnership with nine local technology providers, it facilitated over 4,200 solar energy installations. FEM focused on women's empowerment in productive energy use, supporting 29 women-led

organisations with access to productive use technologies and business management training. Through FEM, 949 women gained access to productive energy solutions across 11 value chains, with 432 women trained in the operation and maintenance of these technologies.

Efficiency

EnDev Bolivia ensured cost-effectiveness by strategically locating its office in a central, cost-efficient region, reducing travel expenses and improving access to rural communities. The programme consistently minimised subsidies while mobilising funds from local, national, and international partners. By sharing costs for logistics, equipment procurement, and operational support with key stakeholders, EnDev enhanced efficiency while maintaining high-impact outcomes. On average, EnDev Bolivia invested EUR 20 per household, social institution, or micro, small, or medium-sized enterprise, aligning with the global EnDev benchmark of EUR 20 per person. In recent years, grid electrification costs were further optimised, decreasing to EUR 16 per household.

Impact

Between 2006 and 2023, EnDev contributed to an estimated 17% of the overall increase in rural electrification in Bolivia - 14% through grid densification and 3% via off-grid solar photovoltaic systems. EnDev's provision of reliable and detailed data on electrical connections enabled rural electricity utilities and cooperatives to improve their planning and service provision. The installation of certified quality electrical materials also set a benchmark within the sector. EnDev identified a critical gap in government electrification efforts: promoting productive energy use significantly increases electricity consumption, making grid expansion more sustainable. By introducing productive energy use initiatives, EnDev fundamentally reshaped Bolivia's energy landscape. EnDev was a pioneer in this field, raising awareness of its importance and engaging with the government, international cooperation entities, and non-governmental organisations now active in this field.

EnDev also played a key role in developing off-grid solar photovoltaic markets and strengthening local value chains. This included to ensure that suppliers provided minimum quality guarantees, warranties, and after-sales services.

Gender was a core focus of EnDev Bolivia's interventions. The programme trained women electricians and partnered with utilities to disseminate anti-violence messaging, including emergency helpline numbers. EnDev also played a critical role in strengthening women entrepreneurs and women-led micro, small, and medium-sized enterprises in the productive energy sector.

In the clean cooking sector, nearly 300,000 people benefited from improved cooking solutions, reducing indoor air pollution, decreasing spending on firewood, and preventing deforestation equivalent to 130,000 tonnes of firewood per year.

Sustainability

EnDev Bolivia's lasting impact is evident in its successful integration into government and stakeholder initiatives. The approaches developed by EnDev for household electrification have been institutionalised by the Bolivian government, ENDE, and rural utilities and are now reflected in national investment plans. EnDev's collaboration with the government extended to Inter-American Development Bank-funded projects, as well as active participation in the Energy Subgroups, a coalition of international cooperation partners supporting Bolivia's energy sector. To ensure ongoing implementation, EnDev transferred its database of users and trained personnel national entities.

In the clean cooking sector, technical expertise was handed over to the government's APMT, the agency responsible for Bolivia's nationally determined contributions, and advisory support was provided to UN Women. The Cookstove Testing Centre, established in 2017 with the Universidad Mayor de San Andrés, has become an independent, internally recognised certification body, additional funding for its operations.

EnDev's productive energy use approaches and strategies were successfully transferred to key national and international actors, including IICA, the Inter-American Development Bank, Practical Action, and the Bolivian government. The FEM initiative was handed over to APMT and Practical Action and has already been replicated in 2024. It also serves as the foundation for a new BMZ programme in Bolivia currently under development. The FASERTe model was transferred to IICA and is now being replicated in five other Latin American countries.

The private sector has been permanently strengthened. Solar photovoltaic and productive use appliance suppliers benefited from entrepreneurial, marketing, and technical training in collaboration with national and international experts. EnDev also connected suppliers with financial institutions and the government, facilitating two national events that brought together key stakeholders.

Through its strategic phase-out and long-term presence in Bolivia, EnDev has ensured that much its work will continue through public, private, and civil society actors. Its influence is evident in national policies, private sector growth, and the continued expansion of energy access across the country.

Abbreviations

ADES	Association pour le Développement de l'Energie Solaire, Switzerland
AECID	Agencia Española de Cooperación Internacional para el Desarrollo Spanish International Development Aid
AVSI	Association of Volunteers in International Services
BMZ	German Federal Ministry of Economic Cooperation and Development
CHF	Swiss franc
CO ₂ e	Carbon dioxide equivalents
DFAT	Australian Department of Foreign Affairs and Trade
DGIS	Netherlands Directorate-General for International Cooperation
DSS	Demand-side subsidy
eCooking	Electric Cooking
ECOWAS	Economic Community of West African States
EnDev	Energising Development
ESMAP	Energy Sector Management Assistance Program
EU	European Union
EUR	Euro
FCDO	UK Foreign, Commonwealth & Development Office
GCF	Green Climate Fund
GBP	British Pound
GEAPP	Global Energy Alliance for People and Planet
GeCA	Global eCooking Accelerator
GeCCo	Global electric Cooking Coalition
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GOGLA	Global Off-Grid Lighting Association
HTC	Higher-tier cooking
ICEIDA	Icelandic International Development Agency
KOFIH	Korea Foundation for International Healthcare

LDC	Least developed countries
LLDC	Landlocked Developing Countries
LNOB	Leave no one behind
MECS	Modern Energy Cooking Services Programme
MSME	Micro-, small-, and medium-scale sized enterprises
NDC	Nationally Determined Contributions
NIS	Nordic International Support Foundation
NOK	Norwegian Krone
PV	Photovoltaic
RBF	Results-based financing
ReCCA	Regional Clean Cooking Action for West Africa
RVO	Rijksdienst voor Ondernemend Nederland
SDC	Swiss Agency for Development and Cooperation
SCCIF	Smart Communities Coalition Innovation Fund
SDG	Sustainable Development Goal
SEE-CC	Strengthening the Entrepreneurial Ecosystem for Clean Cooking
SEforALL	Sustainable Energy for All
SI	Social institution
Sida	Swedish International Development Cooperation Agency
SIINC	Social impact incentives
SME	Small- and medium-sized enterprise
SNV	Stichting Nederlandse Vrijwilligers / Netherlands Development Organisation
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	United States Dollar
UNHCR	United Nations High Commissioner for Refugees

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